

WEST VIRGINIA
SECRETARY OF STATE

JOE MANCHIN III

ADMINISTRATIVE LAW DIVISION

Form #2

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OFFICE WEST VIRGINIA
SECRETARY OF STATE

NOTICE OF A COMMENT PERIOD ON A PROPOSED RULE

AGENCY: West Virginia Board of Education TITLE NUMBER: 126

RULE TYPE: Legislative; CITE AUTHORITY: W. Va. Constitution, Article XII, §2, W.Va. Code §18-2-5 and §18-9A-22

AMENDMENT TO AN EXISTING RULE: YES NO

IF YES, SERIES NUMBER OF RULE BEING AMENDED: _____

TITLE OF RULE BEING AMENDED: _____

IF NO, SERIES NUMBER OF NEW RULE BEING PROPOSED: 44N

TITLE OF RULE BEING PROPOSED: Technology Content Standards and Objectives for West Virginia Schools (2520.14)

IN LIEU OF A PUBLIC HEARING, A COMMENT PERIOD HAS BEEN ESTABLISHED DURING WHICH ANY INTERESTED PERSON MAY SEND COMMENTS CONCERNING THESE PROPOSED RULES. THIS COMMENT PERIOD WILL END ON March 7, 2003 AT 4:45 p.m.. ONLY WRITTEN COMMENTS WILL BE ACCEPTED AND ARE TO BE MAILED TO THE FOLLOWING ADDRESS:

Brenda Williams, Executive Director

Office of Instructional Technology

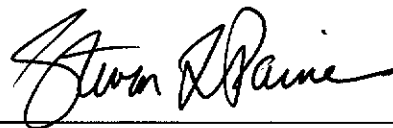
West Virginia Department of Education

Capitol Building 6, Room 346

1900 Kanawha Boulevard, East

Charleston, West Virginia 25305-0330

THE ISSUES TO BE HEARD WILL BE LIMITED TO THIS PROPOSED RULE.



Steven L. Paine
Deputy State Superintendent of Schools

ATTACH A **BRIEF** SUMMARY OF YOUR PROPOSAL

EXECUTIVE SUMMARY

POLICY 2520.14 TECHNOLOGY CONTENT STANDARDS AND OBJECTIVES FOR WEST VIRGINIA SCHOOLS

Background:

Policy 2520 defines the content standards and objectives for the programs of study required by Policy 2510 and establishes a standardized format for such. The original effective date of the policy was July, 1997. In October, 2001, a revision of the Policy incorporating the Content Standards and Objectives for Mathematics, Reading and English Language Arts, Science, Social Studies and Technology was presented to the West Virginia Board of Education. It was placed on public comment and was approved by the Board on December 13, 2001, to be effective July 1, 2003. A second revision incorporating content standards and objectives for adult and technical courses was approved by the Board on July 11, 2002, to be effective July 1, 2003.

Purpose:

The purpose of this Board item is to seek approval for Policy 2520.14 to be placed on comment until March 7, 2003.

Proposed Revisions:

This revision adds the following sections to Policy 2520.14:

- It establishes a separate policy for the content standards, objectives and performance descriptors for technology.
- It expands the number of performance levels for each content standard from three to five.
- It changes the format from instructional goals and objectives to that of content standards.

Slight changes were made to the Foreword, Explanation of Terms and Abbreviations to reflect accommodate the separation of the original Policy 2520 into individual content areas.

126CSR44N

TITLE 126
LEGISLATIVE RULE
BOARD OF EDUCATION

FILED

2003 JAN 13 P 4:03

SERIES 44N
TECHNOLOGY CONTENT STANDARDS AND OBJECTIVES
FOR WEST VIRGINIA SCHOOLS (2520.14)

OFFICE WEST VIRGINIA
STATE

§126-44N-1. General.

1.1. Scope. West Virginia Board of Education Policy 2510 provides a definition of a delivery system for, and an assessment and accountability system for, a thorough and efficient education for West Virginia public school students. Policy 2520.14 defines the content standards (or instructional goals) and objectives for technology as required by W.Va. 126CSR42 (Policy 2510).

1.2. Authority. W.Va. Constitution, Article XII, §2, W. Va. Code §18-2-5 and §18-9A-22.

1.3. Filing Date.

1.4. Effective Date. July 1, 2003.

1.5. This is a new legislative rule.

§126-44N-2. Purpose.

2.1. This policy defines the content standards (or instructional goals) and objectives for the program of study required by Policy 2510 in Technology.

§126-44N-3. Incorporation by Reference.

3.1. A copy of Technology Content Standards and Objectives for West Virginia Schools is attached and incorporated by reference into this policy. Copies may be obtained in the Office of the Secretary of State and in the West Virginia Department of Education, Office of Instructional Services.

§126-44N-4. Summary of the Content Standards and Objectives.

4.1. The West Virginia Board of Education has the responsibility for establishing high quality standards pertaining to all educational standards pertaining to all education programs (W.Va. Code §18-9A-22). The content standards and objectives provide a focus for teachers to teach and students to learn those skills and competencies essential for future success in the workplace and further education. The document includes content standards for K-12 technology, an explanation of terms; objectives that reflect a rigorous and challenging curriculum and performance descriptors.

Foreword

The West Virginia Board of Education and the West Virginia Department of Education are pleased to present Policy 2520.14: Technology Content Standards and Objectives for West Virginia Schools.

Committees of educators from across the state gathered to work on curriculum refinement. The committees incorporated content based on the most current research, national standards and best teaching practices in the field. Primary issues that have been addressed in the current revision work are building a rigorous and challenging curriculum, ensuring a curriculum that is accessible to every student, and designing a format that can easily be used and understood.

West Virginia educators have played a key role in shaping the content standards. Their contribution was critical in creating a policy that is meaningful for the classroom.

A primary change in Policy 2520.14 is that the content area begins with a set of content standards. Grade-level objectives are then organized under the standards, so that the focus stays on helping students achieve the comprehensive goals, not just mastering the incremental steps. The objectives (those incremental steps) are still there – curriculum committees worked very hard to consolidate, delete, sequence, and clarify them as needed to produce a picture of the curriculum that is clear in its intent and manageable in its implementation.

Another change is the addition of performance descriptors. Performance descriptors answer the question “How well does the student perform on the content standards at any given grade level?” (See “Explanation of Terms” section for further discussion of this topic.)

The content standards, objectives and performance descriptors combine to give teachers a powerful resource for planning instruction. The sequencing of the grade level objectives and the levels of performance descriptors acknowledge that students acquire skills and knowledge in increments and at different rates. The focus throughout the document remains on achieving at a high level and on offering all students in West Virginia rigor and challenge.



David Stewart
State Superintendent of Schools

Explanation of Terms

Content Standards are broad descriptions of what students should know and be able to do in a content area. Content standards describe what students' knowledge and skills should be at the end of a K-12 sequence of study.

Objectives are incremental steps toward accomplishment of content standards. Objectives are listed by grade level and are organized around the content standards. Objectives build across grade levels as students advance in their knowledge and skills.

Performance Descriptors describe in narrative format how students demonstrate achievement of the content standards. Five performance levels have been proposed for West Virginia: distinguished, above mastery, mastery, partial mastery and novice. A general description of each of these categories is listed below:

- **Distinguished:** A student at this level has demonstrated exceptional and exemplary performance. The work shows a distinctive and sophisticated application of knowledge and skills that go beyond course or grade level expectations.
- **Above Mastery:** A student at this level has demonstrated competent and proficient performance and exceeds the standard. The work shows a thorough and effective application of knowledge and skills.
- **Mastery:** A student at this level has demonstrated fundamental knowledge and skills that meet the standard. The work is accurate, complete and fulfills all requirements. The work shows solid academic performance at the course or grade level.
- **Partial Mastery:** A student at this level has partially demonstrated fundamental knowledge and skills toward meeting the standard. The work shows basic but inconsistent application of knowledge and skills characterized by errors and/or omissions. Performance needs further development.
- **Novice:** A student at this level has not demonstrated the fundamental knowledge and skills needed to meet the standard. Performance at this level is fragmented and/or incomplete and needs considerable development.

Performance Descriptors serve two functions. Instructionally, they give teachers more information about the level of knowledge and skills they are building in their students. Performance levels and descriptors are also used to categorize and explain student performance on statewide assessment instruments.

Numbering of Standards

The number for each content standard is composed of three parts, each part separated by a period:

- The content area code (e.g., TEC for Technology);
- The letter S, for Standard; and
- The standard number.

Illustrations: TEC.S.1 refers to Technology content standard #1.

Numbering of Objectives

The number of each objective is composed of four parts, each part separated by a period:

- The content area code or course;
- The grade level;
- The number of the content standard addressed; and
- The objective number.

Illustration: TEC.6.2.3 refers to a Technology sixth grade objective that addresses standard #2 in Technology, and that is the third objective listed under that standard.

Numbering of Performance Descriptors

The number for each group of five performance descriptors is composed of four parts, each part separated by a period:

- The content area or course_code;
- The letters PD, for Performance Descriptors;
- The grade level (See exceptions noted above for grade level under numbering of objectives); and
- The standard number.

Illustration: TEC.PD.8.2 refers to Technology performance descriptors for eighth grade, content standard 2.

Unique Electronic Numbers (UENs)

Unique Electronic Numbers (or UENs) are numbers that help to electronically identify, categorize and link specific bits of information. Once Policy 2520.14 is available on the Web, each standard, each objective, and each group of five performance descriptors will have a Unique Electronic Number (UEN) that will always remain the same.

The codes printed in Policy 2520.14 form the basis of the UENs. The only additional set of numbers that will be added to each code to formulate its UEN will be a prefix that indicates the year and month that a particular version of Policy 2520.14 is approved by the State Board of Education. The date is not explicitly printed in the document but it is assumed to be part of every UEN. As sections of 2520.14 are revised, UENs will be changed to reflect the new approval date.

The prefix for the UENs for each content area in Policy 2520.14 is noted at the top of each page containing standards, objectives and performance descriptors

UENs (Unique Electronic Numbers) are unique numbers that facilitate implementation of WV Standards into Electronic formats such as Databases and XML Files. The WV Department of Education encourages everyone who is going to use the WV Content Standards in any kind of electronic distribution, alignment, or software development to use the UENs so that all efforts can be cross-referenced and there is consistency across initiatives.

Illustration: The UEN for performance descriptors for fifth grade technology, standard #2 will be "200304.TEC.PD.5.2".

Abbreviations

Content Area

TEC Technology

Other Abbreviations

PD Performance Descriptors
S Standard (Content Standard)

TECHNOLOGY - Policy 2520.14

West Virginia's vision for education includes the integration of technology throughout the curriculum so that all West Virginia students will develop technology skills that support lifelong learning (Policy 2510, 2470, 2320). Successful learning environments provide opportunities for students to use educational technology interwoven with curricular content.

The technology foundation standards for students are divided into six strands:

- Basic operations and concepts
- Social, ethical and human issues
- Technology productivity tools
- Technology communication tools
- Technology research tools
- Technology problem-solving and decision-making tools

Each strand provides a description of the technology skills and competencies required for students in grades K-12. The technology curriculum is sequential and comprehensive to provide a rigorous and challenging program of studies in all content areas. The classroom teacher should review the objectives of the previous grade level to serve as a starting point for review and maintenance in the sequential curriculum.

The West Virginia technology standards are based upon the *National Educational Technology Standards for Students* published by the International Society for Technology in Education (ISTE). Other references to support the development of the technology standards and objectives include the computer/technology standards from North Carolina, Texas, Michigan, Virginia, Wisconsin, Alaska, and the West Virginia Instructional Goals and Objectives.

As stated in West Virginia Policy 2470, "Students of all ages and citizens as lifelong learners require both the necessary skills and access to technology tools to take responsibility for their own learning, to be actively involved in critical thinking and problem solving, to collaborate and cooperate and to develop as productive citizens. Technology must be interwoven with educational improvements and reform to accomplish educational goals, increase student achievement and provide increased opportunities for lifelong learning."

West Virginia teachers are responsible for integrating technology appropriately into the learning environment to prepare students to live, learn, and work in an information-rich society. The state provides a number of resources through statewide technology initiatives for use by students and teachers. See <http://access.k12.wv.us>.

Technology Standards K-12

Standard 1: Basic Operations and Concepts (TEC.S.1)

Students will:

- demonstrate a sound understanding of the nature and operation of technology systems; and
- demonstrate proficiency in the use of technology.

Standard 2: Social, Ethical and Human Issues (TEC.S.2)

Students will:

- demonstrate understanding of the ethical, cultural, and societal issues related to technology;
- practice responsible use of technology systems, information, and software; and
- develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.

Standard 3: Technology Productivity Tools (TEC.S.3)

Students will:

- use technology tools to enhance learning, increase productivity, and promote creativity; and
- use productivity tools to collaborate in constructing technology-enhanced models, preparing publications, and producing other creative works.

Standard 4: Technology Communication Tools (TEC.S.4)

Students will:

- use telecommunications to collaborate, publish, and interact with peers, experts, and other audiences; and
- use a variety of media and formats to communicate information and ideas effectively to multiple audiences.

Standard 5: Technology Research Tools (TEC.S.5)

Students will:

- use technology to locate, evaluate, and collect information from a variety of sources;
- use technology tools to process data and report results; and
- evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.

Standard 6: Technology Problem-solving and Decision-making Tools (TEC.S.6)

Students will:

- use technology resources for solving problems and making informed decisions; and
- employ technology in the development of strategies for solving problems in the real world.

Kindergarten Technology Standards and Objectives

The kindergarten student will begin to develop basic proficiency in the use of technology. The student will develop an awareness of responsible use of technology systems and begin to discover the purpose of productivity tools. At this introductory level, the student will collaboratively locate information through technology resources. The student will use resources provided through statewide technology resources.

Standard 1: Basic Operations and Concepts (TEC.S.1)

Students will:

- demonstrate a sound understanding of the nature and operation of technology systems; and
- demonstrate proficiency in the use of technology.

Basic Operations and Concepts Objectives

Students will:

- TEC.K.1.1 locate and use letters, numbers and special keys on a keyboard (e.g., Enter, Space Bar, letters [in student's name], and number keys).
- TEC.K.1.2 use a mouse to point and click, and place the cursor at a specified location.
- TEC.K.1.3 log on to computer and start and exit programs.

Performance Descriptors (TEC.PD.K.1)

■ **Distinguished**

The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in technology basic operations and concepts. The student locates and uses letters, numbers, and special keys on the keyboard (enter, space bar, letters in their names, and number keys), applies the skill to a variety of software applications, and guides others in these skills. The student determines when it is appropriate and uses a mouse to point and click. The student applies a variety of strategies to place the cursor at a specified location (e.g., enter key, arrow key, mouse). The student independently logs on to computer and starts and exits programs and is able to assist others.

- **Above Mastery**

The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge in skills that exceed the standard in technology basic operations and concepts. The student locates and uses letters, numbers, and special keys on the keyboard (enter, space bar, letters in their names, and number keys) and applies the skill to a variety of software applications. The student uses a mouse to point and click when appropriate and places the cursor at a specified location. The student independently logs on to computer and starts and exits programs.

- **Mastery**

The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in technology basic operations and concepts. The student locates and uses letters, numbers, and special keys on the keyboard (enter, space bar, letters in their names, and number keys). The student uses a mouse to point and click and places the cursor at a specified location. The student logs on to computer and starts and exits programs.

- **Partial Mastery**

The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in technology basic operations and concepts. Performance needs further development. The student requires some assistance to locate and use letters, numbers, and special keys on the keyboard (enter, space bar, letters in their names, and number keys). The student can use a mouse to point and click. The student needs some assistance to logon to computer and start and exit programs.

- **Novice**

The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in technology basic operations and concepts. Performance needs considerable development. The student requires assistance to locate and use letters, numbers, and special keys on the keyboard (enter, space bar, letters in their names, and number keys). The student has difficulty using a mouse to point and click. The student consistently requires step-by-step instructions from the teacher to logon to computer and start and exit programs.

Standard 2: Social, Ethical and Human Issues (TEC.S.2)

Students will:

- demonstrate understanding of the ethical, cultural, and societal issues related to technology;
- practice responsible use of technology systems, information, and software; and
- develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.

Social, Ethical and Human Issues Objectives

Students will:

TEC.K.2.1 discuss ownership of computer created work.

Performance Descriptors (TEC.PD.K.2)

- **Distinguished**

The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in social, ethical and human issues in technology. The student recognizes and explains to others an individual's right of ownership to computer-generated works.

- **Above Mastery**

The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge in skills that exceed the standard in social, ethical and human issues in technology. The student recognizes an individual's right of ownership to computer-generated works.

- **Mastery**

The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in social, ethical and human issues in technology. The student discusses ownership of computer-created work.

- **Partial Mastery**

The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in social, ethical and human issues in technology. Performance needs further development. The student inconsistently demonstrates an understanding of the concept of individual ownership of computer-created work.

- **Novice**

The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in social, ethical and human issues in technology. Performance needs considerable development. The student does not demonstrate an understanding of the concept of individual ownership of computer-created work.

Standard 3: Technology Productivity Tools (TEC.S.3)

Students will:

- use technology tools to enhance learning, increase productivity, and promote creativity; and
- use productivity tools to collaborate in constructing technology-enhanced models, preparing publications, and producing other creative works.

Technology Productivity Tools Objectives

Students will:

TEC.K.3.1 identify word processing software as a tool for writing.

Performance Descriptors (TEC.PD.K.3)

- **Distinguished**

The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in technology productivity tools. The student identifies word processing software as a tool for writing and identifies and explains that other software tools have other functions (e.g., drawing programs, graphing programs, presentation programs).

- **Above Mastery**

The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge in skills that exceed the standard in technology productivity tools. The student identifies word processing software as a tool for writing and begins to identify that other software tools have other functions (e.g., drawing programs, graphing programs, presentation programs).

- **Mastery**

The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in technology productivity tools. The student identifies word processing software as a tool for writing.

- **Partial Mastery**

The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in technology productivity tools. Performance needs further development. The student identifies that a computer can be used as a tool for writing but needs assistance to identify word processing software as a tool for writing.

- **Novice**

The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in technology productivity tools. Performance needs considerable development. The student cannot identify word processing software as a tool for writing.

Standard 4: Technology Communication Tools (TEC.S.4)

- Objectives for this standard begin at third grade.

Performance Descriptors (TEC.PD.K.4)

- **Distinguished**

Objectives for this standard begin at third grade.

- **Above Mastery**

Objectives for this standard begin at third grade.

- **Mastery**
Objectives for this standard begin at third grade.
- **Partial Mastery**
Objectives for this standard begin at third grade.
- **Novice**
Objectives for this standard begin at third grade.

Standard 5: Technology Research Tools (TEC.S.5)

Students will:

- use technology to locate, evaluate, and collect information from a variety of sources;
- use technology tools to process data and report results; and
- evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.

Technology Research Tools Objectives

Students will:

TEC.K.5.1 participate as a group in locating information in a variety of developmentally appropriate technology resources (interactive books, educational software and elementary multimedia encyclopedias);

TEC.K.5.2 identify the Internet as a source for information.

Performance Descriptors (TEC.PD.K.5)

- **Distinguished**
The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in technology research tools. The student locates information and guides others to find information in a variety of developmentally appropriate technology resources (interactive books, interactive software, and elementary multimedia encyclopedias). The student identifies the Internet as a source for information and explains concept to others.
- **Above Mastery**
The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge in skills that exceed the standard in technology research tools. The student locates information in a variety of developmentally appropriate technology resources (interactive books, interactive software, and elementary multimedia encyclopedias). The student identifies the Internet as a source for information.
- **Mastery**
The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in technology research tools. The student participates as a group in locating information in a variety of developmentally appropriate technology resources (interactive books, interactive software, and elementary multimedia encyclopedias). The student identifies the Internet as a source for information.
- **Partial Mastery**
The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in technology research tools. Performance needs further development. The student participates as a group in locating information in a variety of developmentally appropriate technology resources (interactive books, interactive software, and elementary multimedia encyclopedias). The student requires assistance in identifying the Internet as a source for information.
- **Novice**
The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in technology research tools. Performance needs considerable development. The student requires prompting to participate in a group to locate information in appropriate technology resources (interactive books, interactive software, and elementary multimedia encyclopedias). The student requires extensive assistance to identify the Internet as a source for information.

Standard 6: Technology Problem-solving and Decision-making Tools (TEC.S.6)

- Objectives for this standard begin at second grade.

Performance Descriptors (TEC.PD.K.6)

- **Distinguished**
Objectives for this standard begin at second grade.
- **Above Mastery**
Objectives for this standard begin at second grade.
- **Mastery**
Objectives for this standard begin at second grade.
- **Partial Mastery**
Objectives for this standard begin at second grade.
- **Novice**
Objectives for this standard begin at second grade.

First Grade Technology Standards and Objectives

The first grade student will continue to develop fundamental proficiency in the use of technology. The student will begin to use productivity tools while exploring the ethical issues related to products created electronically. The first grade student will continue to collaborate in locating information through technology resources. The student will use resources provided through statewide technology resources.

Standard 1: Basic Operations and Concepts (TEC.S.1)

Students will:

- demonstrate a sound understanding of the nature and operation of technology systems; and
- demonstrate proficiency in the use of technology.

Basic Operations and Concepts Objectives

Students will:

- TEC.1.1.1 use a keyboard to input information using letters, numbers, arrow key, and delete key; begin to use left/right hand position.
- TEC.1.1.2 use a mouse to click and drag.
- TEC.1.1.3 start and exit programs as well as locate files.

Performance Descriptors (TEC.PD.1.1)

- **Distinguished**
The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in technology basic operations and concepts. The student uses the keyboard with accuracy and explains to others how to input information using letters, numbers, arrow keys, and delete key. The student consistently uses left-right hand position on home row keys. The student uses a mouse to click and drag in appropriate situations and can model the skill for others. The student starts and exits programs as well as locates files and can assist others.
- **Above Mastery**
The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge in skills that exceed the standard in technology basic operations and concepts. The student uses the keyboard with accuracy to input information using letters, numbers, arrow keys, and delete key. The student uses left-right hand position on home row keys. The student uses a mouse to click and drag in appropriate situations. The student starts and exits programs as well as locates files.

- **Mastery**

The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in technology basic operations and concepts. The student uses the keyboard to input information using letters, numbers, arrow keys, and delete key. The student begins to use left-right hand position. The student uses a mouse to click and drag. The student starts and exits programs as well as locates files.

- **Partial Mastery**

The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in technology basic operations and concepts. Performance needs further development. The student uses the keyboard to input information using letters, numbers, arrow keys, and delete key, with limited accuracy. The student can use a mouse to point and click but requires assistance to use the mouse to click and drag. The student needs some assistance to start and exit programs as well as locate files.

- **Novice**

The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in technology basic operations and concepts. Performance needs considerable development. The student requires step-by-step instructions in using the keyboard to input information using letters, numbers, arrow keys, and delete key. The student needs assistance to use a mouse to point and click and place the cursor at a specified location but cannot use the mouse to click and drag. The student needs assistance to start and exit programs as well as locate files.

Standard 2: Social, Ethical and Human Issues (TEC.S.2)

Students will:

- demonstrate understanding of the ethical, cultural, and societal issues related to technology;
- practice responsible use of technology systems, information, and software; and
- develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.

Social, Ethical and Human Issues Objectives

Students will:

TEC.1.2.1 discuss ownership of computer created work.

Performance Descriptors (TEC.PD.1.2)

- **Distinguished**

The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in social, ethical and human issues in technology. The student recognizes and explains to others an individual's right of ownership to computer-generated works.

- **Above Mastery**

The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge in skills that exceed the standard in social, ethical and human issues in technology. The student recognizes an individual's right of ownership to computer-generated works.

- **Mastery**

The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in social, ethical and human issues in technology. The student discusses ownership of computer-created work.

- **Partial Mastery**

The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in social, ethical and human issues in technology. Performance needs further development. The student inconsistently demonstrates an understanding of the concept of individual ownership of computer-created work.

- **Novice**

The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in social, ethical and human issues in technology. Performance needs considerable development. The student does not demonstrate an understanding of the concept of individual ownership of computer-created work.

Standard 3: Technology Productivity Tools (TEC.S.3)

Students will:

- use technology tools to enhance learning, increase productivity, and promote creativity; and
- use productivity tools to collaborate in constructing technology-enhanced models, preparing publications, and producing other creative works.

Technology Productivity Tools Objectives

Students will:

TEC.1.3.1 type words and/or sentences using word processing software.

TEC.1.3.2 create text and insert images.

Performance Descriptors (TEC.PD.1.3)

- **Distinguished**

The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in technology productivity tools. The student uses word processing software with some accuracy to type words and/or sentences. The student creates text and inserts images that support and enhance the understanding of the text. The student models these skills for others.

- **Above Mastery**

The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge in skills that exceed the standard in technology productivity tools. The student uses word processing software with some accuracy to type words and/or sentences. The student creates text and inserts images that support and enhance the understanding of the text.

- **Mastery**

The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in technology productivity tools. The student uses word processing software to type words and/or sentences. The student creates text and inserts images.

- **Partial Mastery**

The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in technology productivity tools. Performance needs further development. The student requires assistance to use word processing software to type words and/or sentences. The student creates text but cannot insert images.

- **Novice**

The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in technology productivity tools. Performance needs considerable development. The student identifies word processing software as a tool for writing but cannot create text using word processing software.

Standard 4: Technology Communication Tools (TEC.S.4)

- Objectives for this standard begin at third grade.

Performance Descriptors (TEC.PD.1.4)

- **Distinguished**

Objectives for this standard begin at third grade.

- **Above Mastery**

Objectives for this standard begin at third grade.

- **Mastery**

Objectives for this standard begin at third grade.

- **Partial Mastery**

Objectives for this standard begin at third grade.

- **Novice**

Objectives for this standard begin at third grade.

Standard 5: Technology Research Tools (TEC.S.5)

Students will:

- use technology to locate, evaluate, and collect information from a variety of sources;
- use technology tools to process data and report results; and
- evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.

Technology Research Tools Objectives

Students will:

TEC.1.5.1 participate as a group in locating information in a variety of developmentally appropriate technology resources (e.g., interactive books, educational software and elementary multimedia encyclopedias);

TEC.1.5.2 identify the Internet as a source for information.

Performance Descriptors (TEC.PD.1.5)

- **Distinguished**

The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in technology research tools. The student locates information and guides others to find information in a variety of developmentally appropriate technology resources (interactive books, interactive software, and elementary multimedia encyclopedias). The student identifies the Internet as a source for information and explains concept to others.

- **Above Mastery**

The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge in skills that exceed the standard in technology research tools. The student locates information in a variety of developmentally appropriate technology resources (interactive books, interactive software, and elementary multimedia encyclopedias). The student identifies the Internet as a source for information.

- **Mastery**

The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in technology research tools. The student participates as a group in locating information in a variety of developmentally appropriate technology resources (interactive books, interactive software, and elementary multimedia encyclopedias). The student identifies the Internet as a source for information.

- **Partial Mastery**

The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in technology research tools. Performance needs further development. The student participates as a group in locating information in a variety of developmentally appropriate technology resources (interactive books, interactive software, and elementary multimedia encyclopedias). The student requires assistance in identifying the Internet as a source for information.

- **Novice**

The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in technology research tools. Performance needs considerable development. The student requires prompting to participate in a group to locate information in appropriate technology resources (interactive books, interactive software, and elementary multimedia encyclopedias). The student requires extensive assistance to identify the Internet as a source for information.

Standard 6: Technology Problem-solving and Decision-making Tools (TEC.S.6)

- Objectives for this standard begin at second grade.

Performance Descriptors (TEC.PD.1.6)

- **Distinguished**
Objectives for this standard begin at second grade.
- **Above Mastery**
Objectives for this standard begin at second grade.
- **Mastery**
Objectives for this standard begin at second grade.
- **Partial Mastery**
Objectives for this standard begin at second grade.
- **Novice**
Objectives for this standard begin at second grade.

Second Grade Technology Standards and Objectives

The second grade student will begin to practice correct keyboarding and basic operations. The student will expand use of productivity tools, and understand the ownership of computer-generated works. The students will begin to explore the purpose of software programs to collaboratively gather information. The second grade student will begin to locate electronic information independently. The student will use resources provided through statewide technology resources.

Standard 1: Basic Operations and Concepts (TEC.S.1)

Students will:

- demonstrate a sound understanding of the nature and operation of technology systems; and
- demonstrate proficiency in the use of technology.

Basic Operations and Concepts Objectives

Students will:

- TEC.2.1.1 demonstrate correct keyboarding posture and finger placement for the home row and upper and lower case letters.
- TEC.2.1.2 utilize the skill of right clicking with a mouse.
- TEC.2.1.3 handle and use diskettes and CD's with care.

Performance Descriptors (TEC.PD.2.1)

- **Distinguished**
The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in technology basic operations and concepts. The student applies correct keyboarding posture and finger placement for the home row and upper and lower case letters (utilizes shift key) to complete tasks. The student appropriately selects and utilizes the skill of right clicking with the mouse and handles and uses diskettes and CDs with care.
- **Above Mastery**
The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge in skills that exceed the standard in technology basic operations and concepts. The student demonstrates and practices correct keyboarding posture and finger placement for the home row and upper and lower case letters (utilizes shift key). The student utilizes the skill of right clicking with the mouse and handles and uses diskettes and CDs with care.
- **Mastery**
The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in technology basic operations and concepts. The student demonstrates correct keyboarding posture and finger placement for the home row and upper and lower case letters (utilizes shift key). The student utilizes the skill of right clicking with the mouse and handles and uses diskettes and CDs with care.

- **Partial Mastery**

The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in technology basic operations and concepts. Performance needs further development. The student inconsistently demonstrates correct keyboarding posture and finger placement for the home row and upper and lower case letters (utilizes shift key). The student inconsistently utilizes the skill of right clicking with the mouse and handling diskettes and CDs with care.

- **Novice**

The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in technology basic operations and concepts. Performance needs considerable development. The student demonstrates incorrect keyboarding posture and finger placement for the home row and upper and lower case letters (utilizes shift key). The student requires assistance to utilize the skill of right clicking with the mouse and in handling and using diskettes and CDs with care.

Standard 2: Social, Ethical and Human Issues (TEC.S.2)

Students will:

- demonstrate understanding of the ethical, cultural, and societal issues related to technology;
- practice responsible use of technology systems, information, and software; and
- develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.

Social, Ethical and Human Issues Objectives

Students will:

TEC.2.2.1 recognize an individual's rights of ownership to computer-generated work.

Performance Descriptors (TEC.PD.2.2)

- **Distinguished**

The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in social, ethical and human issues in technology. The student recognizes an individual's right of ownership to computer-generated works and applies concept in practice.

- **Above Mastery**

The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge in skills that exceed the standard in social, ethical and human issues in technology. The student recognizes an individual's right of ownership to computer-generated works and gives examples.

- **Mastery**

The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in social, ethical and human issues in technology. The student recognizes an individual's right of ownership to computer-generated works.

- **Partial Mastery**

The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in social, ethical and human issues in technology. Performance needs further development. The student discusses ownership of computer-created work but inconsistently recognizes an individual's right of ownership to computer-generated works.

- **Novice**

The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in social, ethical and human issues in technology. Performance needs considerable development. The student fails to understand an individual's right of ownership to computer-generated works.

Standard 3: Technology Productivity Tools (TEC.S.3)

Students will:

- use technology tools to enhance learning, increase productivity, and promote creativity; and
- use productivity tools to collaborate in constructing technology-enhanced models, preparing publications, and producing other creative works.

Technology Productivity Tools Objectives

Students will:

TEC.2.3.1 use a word processing program, to create, save, print and open existing files.

TEC.2.3.2 enter data and create graphs electronically as a group activity.

TEC.2.3.3 identify and use electronic drawing/paint programs to combine graphics and text.

Performance Descriptors (TEC.PD.2.3)

■ **Distinguished**

The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in technology productivity tools. The student guides others in determining when a word processing program is appropriate to create, save, print, and open existing files for class assignments. The student leads and models for others in a group in entering data and creating graphs electronically. The student identifies and models the use of electronic drawing/paint programs to insert graphics that support and enhance the understanding of the text.

■ **Above Mastery**

The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge in skills that exceed the standard in technology productivity tools. The student determines when a word processing program is appropriate to create, save, print, and open existing files for class assignments. The student enters data and creates graphs electronically as a group activity without teacher assistance. The student identifies and uses electronic drawing/paint programs to insert graphics that support and enhance the understanding of the text.

■ **Mastery**

The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in technology productivity tools. The student uses a word processing program to create, save, print, and open existing files. The student enters data and creates graphs electronically as a group activity. The student identifies and uses electronic drawing/paint programs to combine graphics and text.

■ **Partial Mastery**

The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in technology productivity tools. Performance needs further development. The student requires some assistance to use a word processing program to create, save, print, and open existing files. The student enters data in a group activity but cannot create graphs electronically. The student identifies electronic drawing/paint programs as tools to combine graphics and text but requires assistance to use these programs.

■ **Novice**

The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in technology productivity tools. Performance needs considerable development. The student requires step-by-step instructions to use a word processing program to create, save, print, and open existing files. The student enters data with explicit instruction but cannot create graphs electronically. The student seldom identifies electronic drawing/paint programs as tools to combine graphics and text and requires considerable assistance to use these programs.

Standard 4: Technology Communication Tools (TEC.S.4)

- Objectives for this standard begin at third grade.

Performance Descriptors (TEC.PD.2.4)

- **Distinguished**
Objectives for this standard begin at third grade.
- **Above Mastery**
Objectives for this standard begin at third grade.
- **Mastery**
Objectives for this standard begin at third grade.
- **Partial Mastery**
Objectives for this standard begin at third grade.
- **Novice**
Objectives for this standard begin at third grade.

Standard 5: Technology Research Tools (TEC.S.5)

Students will:

- use technology to locate, evaluate, and collect information from a variety of sources;
- use technology tools to process data and report results; and
- evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.

Technology Research Tools Objectives

Students will:

- TEC.2.5.1 begin to locate information in a variety of developmentally appropriate technology resources (interactive books, educational software and elementary multimedia encyclopedias).
- TEC.2.5.2 discuss, as a group, how the Internet and email are tools to gather and locate information.

Performance Descriptors (TEC.PD.2.5)

- **Distinguished**
The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in technology problem-solving and decision-making tools. The student independently locates information in a variety of developmentally appropriate technology resources (interactive books, educational software, and elementary multimedia encyclopedias). The student explains how the Internet and email are tools to gather and locate information. The student models these skills for others.
- **Above Mastery**
The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge in skills that exceed the standard in technology problem-solving and decision-making tools. The student locates information in a variety of developmentally appropriate technology resources (interactive books, educational software, and elementary multimedia encyclopedias). The student leads discussion in a group on how the Internet and email are tools to gather and locate information.
- **Mastery**
The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in technology research tools. The student begins to locate information in a variety of developmentally appropriate technology resources (interactive books, educational software, and elementary multimedia encyclopedias). The student discusses as a group how the Internet and email are tools to gather and locate.
- **Partial Mastery**
The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in technology problem-solving and decision-making tools. Performance needs further development. The student requires assistance to locate information in a variety of developmentally appropriate technology resources (interactive books, educational software, and elementary multimedia encyclopedias). The student discusses as a group how the Internet and email are tools to gather and locate information.

- **Novice**

The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in technology problem-solving and decision-making tools. Performance needs considerable development. The student requires extensive assistance to locate information in developmentally appropriate technology resources (interactive books, educational software, and elementary multimedia encyclopedias). The student requires prompting to participate in group discussions how the Internet and email are tools to gather and locate information.

Standard 6: Technology Problem-solving and Decision-making Tools (TEC.S.6)

Students will:

- use technology resources for solving problems and making informed decisions; and
- employ technology in the development of strategies for solving problems in the real world.

Technology Problem-solving and Decision-making Tools Objectives

Students will:

TEC.2.6.1 begin to identify the different purposes among software applications (e.g., puzzles, writing tools, graphing tools).

Performance Descriptors (TEC.PD.2.6)

- **Distinguished**

The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in technology problem-solving and decision-making tools. The student identifies and explains different purposes among software applications (e.g., puzzles, writing tools, graphing tools).

- **Above Mastery**

The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge in skills that exceed the standard in technology problem-solving and decision-making tools. The student identifies different purposes among software applications (e.g., puzzles, writing tools, graphing tools).

- **Mastery**

The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in technology problem-solving and decision-making tools. The student begins to identify different purposes among software applications (e.g., puzzles, writing tools, graphing tools).

- **Partial Mastery**

The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in technology problem-solving and decision-making tools. Performance needs further development. The student requires assistance to identify different purposes among software applications (e.g., puzzles, writing tools, graphing tools).

- **Novice**

The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in technology problem-solving and decision-making tools. Performance needs considerable development. The student requires extensive assistance to identify different purposes among software applications (e.g., puzzles, writing tools, graphing tools).

Third Grade Technology Standards and Objectives

The third grade student will continue to practice correct keyboarding skills and basic operations. The student will use word processing and spreadsheet applications and explore databases and presentation software. The third grade student will understand the use of email as a communication tool. The student will continue to expand use of appropriate technology resources, looking at book-marked locations and evaluating their usefulness. The student will use resources provided through statewide technology resources.

Standard 1: Basic Operations and Concepts (TEC.S.1)

Students will:

- demonstrate a sound understanding of the nature and operation of technology systems; and
- demonstrate proficiency in the use of technology.

Basic Operations and Concepts Objectives

Students will:

TEC.3.1.1 demonstrate correct keyboarding posture and finger placement for the home row keys and symbol keys (e.g., period, question marks caps lock, arrow keys, shift, esc, plus, minus, equal, dollar signs).

TEC.3.1.2 handle diskettes, CDs, zip disks, and other computer equipment with care.

Performance Descriptors (TEC.PD.3.1)

■ Distinguished

The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in technology's basic operations and concepts. The student applies correct keyboarding posture and finger placement for the home row keys and symbol keys to complete tasks and types with some accuracy. The student handles diskettes, CD's, zip disks and other computer equipment with care and is able to provide guidance to others (e.g., reboot, use help systems).

■ Above Mastery

The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge in skills that exceed the standard in technology basic operations and concepts. The student demonstrates and practices correct keyboarding posture and finger placement for the home row keys and symbol keys and begins to type with some accuracy. The student handles diskettes, CD's, zip disks and other computer equipment with care.

■ Mastery

The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in technology basic operations and concepts. The student demonstrates correct keyboarding posture and finger placement for the home row keys and symbol keys and handles diskettes, CD's, zip disks and other computer equipment with care.

■ Partial Mastery

The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in technology basic operations and concepts. Performance needs further development. The student inconsistently demonstrates correct keyboarding posture and finger placement for the home row keys and symbol keys. The student requires direction in handling computer equipment.

■ Novice

The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in technology basic operations and concepts. Performance needs considerable development. The student demonstrates incorrect keyboarding posture and finger placement for the home row keys. The student does not handle computer equipment with care.

Standard 2: Social, Ethical and Human Issues (TEC.S.2)

Students will:

- demonstrate understanding of the ethical, cultural, and societal issues related to technology;
- practice responsible use of technology systems, information, and software; and
- develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.

Social, Ethical and Human Issues Objectives

Students will:

TEC.3.2.1 recognize that the copyright law protects the electronic products that a person, group, or company has created.

Performance Descriptors (TEC.PD.3.2)

- **Distinguished**
The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in social, ethical and human issues in technology. The student explains and models the correct use of copyrighted materials in electronic products.
- **Above Mastery**
The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge in skills that exceed the standard in social, ethical and human issues in technology. The student recognizes and describes the copyright laws that protect the electronic products a person, group, or company has created.
- **Mastery**
The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in social, ethical and human issues in technology. The student recognizes that copyright laws protect the electronic products a person, group, or company has created.
- **Partial Mastery**
The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in social, ethical and human issues in technology. Performance needs further development. The student has difficulty understanding that copyright laws protect the electronic products a person, group, or company has created.
- **Novice**
The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in social, ethical and human issues in technology. Performance needs considerable development. The student does not understand that copyright laws protect the electronic products a person, group, or company has created.

Standard 3: Technology Productivity Tools (TEC.S.3)

Students will:

- use technology tools to enhance learning, increase productivity, and promote creativity; and
- use productivity tools to collaborate in constructing technology-enhanced models, preparing publications, and producing other creative works.

Technology Productivity Tools Objectives

Students will:

- TEC.3.3.1 use a word processor to enter text with some formatting (e.g., boldface, underlining and font size), cut and paste, spell check, and edit text.
- TEC.3.3.2 begin to enter and graph data electronically.
- TEC.3.3.3 organize and arrange information for a multi-media presentation as a group activity.

Performance Descriptors (TEC.PD.3.3)

- **Distinguished**

The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in technology productivity tools. The student determines the appropriate use of the features of a word processor to enhance class assignments as the student formats text (e.g., boldface, underlining, and font size), cuts and pastes, spell checks, and edits text. The student enters and graphs data electronically and provides assistance to others. The student organizes and arranges information for a multimedia presentation and begins to use presentation software. The student models these skills for others.

- **Above Mastery**

The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge in skills that exceed the standard in technology productivity tools. The student determines appropriate use of the features of a word processor to enhance class assignments as the student formats text (e.g., boldface, underlining, and font size), cuts and pastes, spell checks, and edits text. The student enters and graphs data electronically. The student organizes and arranges information for a multimedia presentation.

- **Mastery**

The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in technology productivity tools. The student uses a word processor to enter text with some formatting (e.g., boldface, underlining, and font size), cut and paste, spell check, and edit text. The student begins to enter and graph data electronically. The student organizes and arranges information for a multimedia presentation as a group activity.

- **Partial Mastery**

The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in technology productivity tools. Performance needs further development. The student requires assistance with the following skills: using a word processor to enter text with some formatting (e.g., boldface, underlining, and font size), cut and paste, spell check, and edit text; entering and graphing data electronically; and organizing and arranging information for a group multimedia presentation.

- **Novice**

The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in technology productivity tools. Performance needs considerable development. The student cannot complete the following skills without step-by-step instructions: using a word processor to enter text with some formatting (e.g., boldface, underlining, and font size), cut and paste, spell check, and edit text; entering and graphing data electronically; and organizing and arranging information for a group multimedia presentation.

Standard 4: Technology Communication Tools (TEC.S.4)

Students will:

- use telecommunications to collaborate, publish, and interact with peers, experts, and other audiences; and
- use a variety of media and formats to communicate information and ideas effectively to multiple audiences.

Technology Communication Tools Objectives

Students will:

TEC.3.4.1 understand the use of email as a communication tool.

TEC.3.4.2 participate in a curriculum-based telecommunications project as a group activity.

Performance Descriptors (TEC.PD.3.4)

- **Distinguished**

The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in technology communication tools. The student effectively applies the use of email as a communication tool. The student participates in a curriculum-based telecommunications project as an independent activity.

- **Above Mastery**

The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge in skills that exceed the standard in technology communication tools. The student understands and explains the use of email as a communication tool. The student participates in a curriculum-based telecommunications project as a small group activity.

- **Mastery**

The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in technology communication tools. The student understands the use of email as a communication tool. The student participates in a curriculum-based telecommunications project as a group activity.

- **Partial Mastery**

The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in technology communication tools. Performance needs further development. The student understands some functions of email as a communication tool. The student requires instructions to participate in a group curriculum-based telecommunications project.

- **Novice**

The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in technology communication tools. Performance needs considerable development. The student does not understand the use of email as a communication tool. The student makes minimal contributions to group curriculum-based telecommunications projects.

Standard 5: Technology Research Tools (TEC.S.5)

Students will:

- use technology to locate, evaluate, and collect information from a variety of sources;
- use technology tools to process data and report results; and
- evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.

Technology Research Tools Objectives

Students will:

TEC.3.5.1 locate information in a variety of developmentally appropriate technology resources (interactive books, educational software and elementary multimedia encyclopedias).

TEC.3.5.2 use bookmarked URL's as a tool for locating information.

Performance Descriptors (TEC.PD.3.5)

- **Distinguished**

The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in technology research tools. The student locates and assists others in locating information in a variety of developmentally appropriate technology resources (e.g., interactive books, educational software, and elementary multimedia encyclopedias). The student uses bookmarked URLs as a tool for locating information. The student finds information and bookmarks URLs for future use.

- **Above Mastery**

The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge in skills that exceed the standard in technology research tools. The student locates information in a variety of developmentally appropriate technology resources (e.g., interactive books, educational software, and elementary multimedia encyclopedias). The student independently selects and uses appropriate bookmarked URLs as a tool for locating information. The student follows links from bookmarked URLs to find additional information.

- **Mastery**

The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in technology research tools. The student locates information in a variety of developmentally appropriate technology resources (e.g., interactive books, educational software, and elementary multimedia encyclopedias). The student uses bookmarked URLs as a tool for locating information.

- **Partial Mastery**

The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in technology research tools. Performance needs further development. The student requires some assistance to locate information in a variety of developmentally appropriate technology resources (e.g., interactive books, educational software, and elementary multimedia encyclopedias). The student requires some assistance to use bookmarked URLs as a tool for locating information.

- **Novice**

The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in technology research tools. Performance needs considerable development. The student requires extensive assistance to locate information in developmentally appropriate technology resources (e.g., interactive books, educational software, and elementary multimedia encyclopedias). The student requires extensive assistance to use bookmarked URLs as a tool for locating information.

Standard 6: Technology Problem-solving and Decision-making Tools

Students will:

- use technology resources for solving problems and making informed decisions; and
- employ technology in the development of strategies for solving problems in the real world.

Technology Problem-solving and Decision-making Tools Objectives (TEC.S.6)

Students will:

TEC.3.6.1 discuss, as a group, appropriate technology tools to perform a task.

Performance Descriptors (TEC.PD.3.6)

- **Distinguished**

The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in technology problem-solving and decision-making tools. The student chooses appropriate technology tools to perform a task.

- **Above Mastery**

The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge in skills that exceed the standard in technology problem-solving and decision-making tools. The student explains the appropriate technology tools necessary to complete a task.

- **Mastery**

The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in technology problem-solving and decision-making tools. The student discusses, as a group, appropriate technology tools to perform a task.

- **Partial Mastery**

The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in technology problem-solving and decision-making tools. Performance needs further development. The student makes minimal contribution to group discussions about appropriate technology tools to perform a task.

- **Novice**

The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in technology problem-solving and decision-making tools. Performance needs considerable development. The student does not contribute to group discussions about appropriate technology tools to perform a task.

Fourth Grade Technology Standards and Objectives

The fourth grade student will demonstrate some proficiency in proper keyboarding skills. The student will understand the meaning of acceptable use and personal responsibility in the use of technology. The student will continue to expand the use of word processing software, begin to use a spreadsheet to perform calculations, understand the functionality of a database and create a simple multi-media project as a group. The fourth grade student will begin to understand telecommunications, to select appropriate electronic tools such as search engines, and use software for problem solving. The student will use resources provided through statewide technology resources.

Standard 1: Basic Operations and Concepts (TEC.S.1)

Students will:

- demonstrate a sound understanding of the nature and operation of technology systems; and
- demonstrate proficiency in the use of technology.

Basic Operations and Concepts Objectives

Students will:

TEC.4.1.1 demonstrate with some proficiency proper finger placement for all keys on the keyboard.

TEC.4.1.2 troubleshoot simple problems in software (e.g., reboot, use help systems).

Performance Descriptors (TEC.PD.4.1)

■ Distinguished

The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in technology basic operations and concepts. The student uses touch-typing skills to improve speed and accuracy and applies skills to complete tasks. The student diagnoses and solves common technology problems and manages and maintains technology tools (e.g., properly shuts down systems, uses help systems).

■ Above Mastery

The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge in skills that exceed the standard in technology basic operations and concepts. The student applies proper finger placement for all keys on the keyboard and explains troubleshooting of simple software problems (e.g., reboot, use help systems).

■ Mastery

The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in technology basic operations and concepts. The student demonstrates with some proficiency proper finger placement for all keys on the keyboard and troubleshoots simple problems in software (e.g., reboot, use help systems).

■ Partial Mastery

The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in technology basic operations and concepts. Performance needs further development. The student inconsistently demonstrates proper finger placement for keys on the keyboard. The student can identify simple problems in software (e.g., reboot, use help systems).

■ Novice

The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in technology basic operations and concepts. Performance needs considerable development. The student demonstrates incorrect finger placement for keys on the keyboard and is seldom recognizes simple solutions to problems in software (e.g., reboot, use help systems).

Standard 2: Social, Ethical and Human Issues (TEC.S.2)

Students will:

- demonstrate understanding of the ethical, cultural, and societal issues related to technology;
- practice responsible use of technology systems, information, and software; and
- develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.

Social, Ethical and Human Issues Objectives

Students will:

TEC.4.2.1 identify the need for acceptable use policies (AUP).

TEC.4.2.2 identify violations of the copyright law and recognize correct use of copyrighted materials in electronic products.

Performance Descriptors (TEC.PD.4.2)

■ **Distinguished**

The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in social, ethical and human issues in technology. The student explains and models acceptable use. The student explains and models the correct use of copyrighted materials in electronic products and understands consequences of copyright law infringements.

■ **Above Mastery**

The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge in skills that exceed the standard in social, ethical and human issues in technology. The student recognizes and describes the need for acceptable use policies. The student recognizes and describes correct use of copyrighted materials in electronic products and begins to understand the consequences of copyright law infringement.

■ **Mastery**

The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in social, ethical and human issues in technology. The student identifies the need for acceptable use policies and identifies violations of the copyright law. The student recognizes correct use of copyrighted materials in electronic products.

■ **Partial Mastery**

The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in social, ethical and human issues in technology. Performance needs further development. The student identifies the need for acceptable use policies and requires some assistance identify violations of the copyright law. The student does not consistently recognize correct use of copyrighted materials in electronic products.

■ **Novice**

The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in social, ethical and human issues in technology. Performance needs considerable development. Although the student recognizes that the copyright laws protect the electronic products that a company, group, or person has created, the student cannot recognize correct use of copyrighted materials in electronic products.

Standard 3: Technology Productivity Tools (TEC.S.3)

Students will:

- use technology tools to enhance learning, increase productivity, and promote creativity; and
- use productivity tools to collaborate in constructing technology-enhanced models, preparing publications, and producing other creative works.

Technology Productivity Tools Objectives

Students will:

- TEC.4.3.1 use a word processing program to create and format a document (e.g., paragraph, tabs, justification, margins) and review cut and paste, spell check and text formatting.
- TEC.4.3.2 enter data into a prepared spreadsheet to perform calculations and recognize the changes that occur.
- TEC.4.3.3 create a multi-media project as a class group activity.

Performance Descriptors (TEC.PD.4.3)

- **Distinguished**

The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in technology productivity tools. The student determines and guides others in the appropriate use of the features of a word processor to enhance class assignments (e.g., paragraph, tabs, justification margins, cut and paste, spell-check, and text formatting). The student enters data into a prepared spreadsheet to perform calculations and recognizes, explains and analyzes the changes that occur. The student leads others in creating a multimedia project.

- **Above Mastery**

The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge in skills that exceed the standard in technology productivity tools. The student determines appropriate use of the features of a word processor to enhance class assignments as the student creates and formats a document (e.g., paragraph, tabs, justification margins), and reviews the skills of cut and paste, spell-check, and text formatting. The student enters data into a prepared spreadsheet to perform calculations and recognizes and explains the changes that occur. The student begins to create a multimedia project.

- **Mastery**

The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in technology productivity tools. The student uses a word processing program to create and format a document (e.g., paragraph, tabs, justification margins), and reviews the skills of cut and paste, spell-check, and text formatting. The student enters data into a prepared spreadsheet to perform calculations and recognizes the changes that occur. The student creates a multimedia project as a class group activity.

- **Partial Mastery**

The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in technology productivity tools. Performance needs further development. The student requires step-by-step instructions to use a word processing program to create and format a document (e.g., paragraph, tabs, justification margins) and to enter data into a prepared spreadsheet to perform calculations and needs to be shown the changes that occur. The student requires assistance to create a group multimedia project.

- **Novice**

The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in technology productivity tools. Performance needs considerable development. The student can use a word processor to enter text with some formatting (e.g., boldface, underlining, and font size), cut and paste, spell check, and edit text but cannot format documents. The student can begin to enter and graph data electronically but cannot perform calculations. The student needs extensive assistance in organizing and arranging information for a group multimedia presentation.

Standard 4: Technology Communication Tools (TEC.S.4)

Students will:

- use telecommunications to collaborate, publish, and interact with peers, experts, and other audiences; and
- use a variety of media and formats to communicate information and ideas effectively to multiple audiences.

Technology Communication Tools Objectives

Students will:

TEC.4.4.1 participate in several curriculum-based telecommunication projects as class activities. (e.g., web quests, ask an expert, collaborative email projects).

Performance Descriptors (TEC.PD.4.4)

- **Distinguished**

The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in technology communication tools. The student initiates curriculum-based telecommunication projects as an independent activity (web quests, ask-an-expert, collaborative email projects).

- **Above Mastery**

The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge in skills that exceed the standard in technology communication tools. The student participates in several curriculum-based telecommunication projects as small group activities (web quests, ask-an-expert, collaborative email projects).

- **Mastery**

The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in technology communication tools. The student participates in several curriculum-based telecommunication projects as class activities (web quests, ask-an-expert, collaborative email projects).

- **Partial Mastery**

The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in technology communication tools. Performance needs further development. The student makes minimal contributions to curriculum-based telecommunication projects as class activities (web quests, ask-an-expert, collaborative email projects).

- **Novice**

The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in technology communication tool. Performance needs considerable development. The student fails to complete tasks as part of a curriculum-based telecommunications project as a group activity (web quests, ask-an-expert, collaborative email projects).

Standard 5: Technology Research Tools (TEC.S.5)

Students will:

- use technology to locate, evaluate, and collect information from a variety of sources;
- use technology tools to process data and report results; and
- evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.

Technology Research Tools Objectives

Students will:

TEC.4.5.1 select and use appropriate software and/or other technologies to locate and acquire information from electronic resources (interactive books, educational software and elementary multimedia encyclopedias).

TEC.4.5.2 explore grade level appropriate search engines as tools to locate information electronically.

TEC.4.5.3 evaluate information found via telecommunications for content and usefulness.

Performance Descriptors (TEC.PD.4.5)

- **Distinguished**

The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in technology research tools. The student models for others the uses of appropriate software and/or technologies to locate and acquire information from electronic resources (interactive books, educational software, and elementary multimedia encyclopedias). The student uses and assists others in using grade-level appropriate search engines as tools to locate and compile information electronically. The student evaluates information found via telecommunications for content and usefulness and applies to complete tasks.

- **Above Mastery**

The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge in skills that exceed the standard in technology research tools. The student compares and contrasts appropriate software and/or technologies to locate and acquire information from electronic resources (interactive books, educational software, and elementary multimedia encyclopedias). The student uses grade-level appropriate search engines as tools to locate and compile information electronically. The student evaluates and explains information found via telecommunications for content and usefulness.

- **Mastery**

The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in technology research tools. The student selects and uses appropriate software and/or technologies to locate and acquire information from electronic resources (interactive books, educational software, and elementary multimedia encyclopedias). The student explores grade-level appropriate search engines as tools to locate information electronically. The student evaluates information found via telecommunications for content and usefulness.

- **Partial Mastery**

The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in technology research tools. Performance needs further development. The student requires assistance to select and use appropriate software and/or technologies to locate and acquire information from electronic resources (interactive books, educational software, and elementary multimedia encyclopedias). The student explores grade-level appropriate search engines as tools to locate information electronically. The student requires guidance to evaluate information found via telecommunications for content and usefulness.

- **Novice**

The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in technology research tools. Performance needs considerable development. The student fails to select and use appropriate software and/or technologies to locate and acquire information from electronic resources (interactive books, educational software, and elementary multimedia encyclopedias). The student needs assistance to explore grade-level appropriate search engines as tools to locate information electronically. The student cannot evaluate information found via telecommunications for content and usefulness.

Standard 6: Technology Problem-solving and Decision-making Tools (TEC.S.6)

Students will:

- use technology resources for solving problems and making informed decisions; and
- employ technology in the development of strategies for solving problems in the real world.

Technology Problem-solving and Decision-making Tools Objectives

Students will:

TEC.4.6.1 apply, in a group situation, software programs to solving problems (e.g., word processors, graphing programs, other special purpose programs).

Performance Descriptors (TEC.PD.4.6)

- **Distinguished**
The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in technology problem-solving and decision-making tools. The student independently applies software programs to solving problems (e.g., word processors, graphing programs, other special purpose programs).
- **Above Mastery**
The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge in skills that exceed the standard in technology problem-solving and decision-making tools. The student begins to independently apply software programs to solving problems (e.g., word processors, graphing programs, other special purpose programs).
- **Mastery**
The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in technology problem-solving and decision-making tools. The student applies, in a group situation, software programs to solving problems (e.g., word processors, graphing programs, other special purpose programs).
- **Partial Mastery**
The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in technology problem-solving and decision-making tools. Performance needs further development. The student requires some assistance to apply, in a group situation, software programs to solving problems (e.g., word processors, graphing programs, other special purpose programs).
- **Novice**
The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in technology problem-solving and decision-making tools. Performance needs considerable development. The student requires extensive assistance to apply, in a group situation, software programs to solving problems (e.g., word processors, graphing programs, other special purpose programs).

Fifth Grade Technology Standards and Objectives

The fifth grade student will use touch-typing skills to improve speed and accuracy. Students will practice responsible use of technology systems, information and software. The student will use the editing functions of word processing software, perform simple calculations using spreadsheets, locate and use information in a simple electronic database, and begin to use presentation software. Fifth grade students will use telecommunications for a curriculum based telecommunications project and continue to evaluate electronic information for appropriateness, content, and usefulness. The student will use resources provided through statewide technology resources.

Standard 1: Basic Operations and Concepts (TEC.S.1)

Students will:

- demonstrate a sound understanding of the nature and operation of technology systems; and
- demonstrate proficiency in the use of technology.

Basic Operations and Concepts Objectives

Students will:

- TEC.5.1.1 use touch typing skills to improve speed and accuracy.
- TEC.5.1.2 diagnose and solve common technology problems.
- TEC.5.1.3 manage and maintain technology tools (i.e., properly shut down system).

Performance Descriptors (TEC.PD.5.1)

- **Distinguished**

The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in technology basic operations and concepts. The student uses touch-typing skills to improve speed and accuracy and independently applies skills in appropriate subject areas. The student assists others in diagnosing and solving common technology problems and manages and maintains technology tools.

- **Above Mastery**

The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge in skills that exceed the standard in technology basic operations and concepts. The student uses touch typing skills to improve and maintain speed and accuracy. The student diagnoses and solves common technology problems and manages and maintains technology tools. The student assists others in utilizing technology.

- **Mastery**

The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in technology basic operations and concepts. The student uses touch typing skills to improve speed and accuracy. The student diagnoses and solves common technology problems and manages and maintains technology tools.

- **Partial Mastery**

The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in technology basic operations and concepts. Performance needs further development. The student inconsistently uses touch-typing skills to improve speed and accuracy. The student can identify common technology problems but cannot independently solve the problems. The student inconsistently manages and maintains technology tools.

- **Novice**

The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in technology basic operations and concepts. Performance needs considerable development. The student demonstrates incorrect touch-typing skills, is unable to diagnose common technology problems and manage or maintain technology tools.

Standard 2: Social, Ethical and Human Issues (TEC.S.2)

Students will:

- demonstrate understanding of the ethical, cultural, and societal issues related to technology;
- practice responsible use of technology systems, information, and software; and
- develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.

Social, Ethical and Human Issues Objectives

Students will:

TEC.5.2.1 describe the use of acceptable use policy (AUP).

TEC.5.2.2 demonstrate an understanding of copyright by citing sources of copyrighted materials in papers, projects and multimedia presentations.

Performance Descriptors (TEC.PD.5.2)

- **Distinguished**

The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in social, ethical and human issues in technology. The student describes and justifies the use of an acceptable use policy and can explain the consequences of misuse. The student independently applies copyright standards by citing sources of copyrighted materials in papers, projects, and multimedia presentations.

- **Above Mastery**

The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge in skills that exceed the standard in social, ethical and human issues in technology. The student describes the use of an acceptable use policy and recognizes violations. The student is beginning to apply copyright standards by citing sources of copyrighted materials in papers, projects, and multimedia presentations.

- **Mastery**

The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in social, ethical and human issues in technology. The student describes the use of an acceptable use policy. The student demonstrates an understanding of copyright by citing sources of copyrighted materials in papers, projects, and multimedia presentations.

- **Partial Mastery**

The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in social, ethical and human issues in technology. Performance needs further development. The student can identify the need for an acceptable use policy. The student can explain copyright but needs some assistance to cite sources of copyrighted materials in papers, projects, and multimedia presentations.

- **Novice**

The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in social, ethical and human issues in technology. Performance needs considerable development. The student is inconsistent in making observations about the purposes of an acceptable use policy. The student can recognize copyrighted materials but requires assistance to correctly cite sources of copyrighted material.

Standard 3: Technology Productivity Tools (TEC.S.3)

Students will:

- use technology tools to enhance learning, increase productivity, and promote creativity; and
- use productivity tools to collaborate in constructing technology-enhanced models, preparing publications, and producing other creative works.

Technology Productivity Tools Objectives

Students will:

TEC.5.3.1 use the editing functions of a word processor (e.g., spell check, grammar check, thesaurus) and review paragraph, tabs, justification, margins.

TEC.5.3.2 create/modify and use spreadsheets to perform simple calculations (+, -, *, /).

TEC.5.3.3 begin to use presentation software; use design template to create a minimum of 3 slides.

Performance Descriptors (TEC.PD.5.3)

- **Distinguished**

The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in technology productivity tools. The student determines and guides others in the appropriate use of the features of a word processor to enhance class assignments (e.g., spell check, grammar check, thesaurus, paragraphs, tabs, justification, and margins). The student creates/modifies and uses spreadsheets to perform simple calculations (+, -, *, /). The student uses presentation software and uses design templates to create a minimum of 3 slides. The student explains these functions and can assist others in utilizing productivity tools.

- **Above Mastery**

The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge in skills that exceed the standard in technology productivity tools. The student determines appropriate use of the features of a word processor to enhance class assignments (e.g., spell check, grammar check, thesaurus, paragraphs, tabs, justification, and margins). The student creates/modifies and uses spreadsheets to perform simple calculations (+, -, *, /). The student uses presentation software and uses design templates to create a minimum of 3 slides. The student explains the uses of all of these functions.

- **Mastery**

The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in technology productivity tools. The student uses the editing functions of a word processor (e.g., spell check, grammar check, thesaurus) and reviews paragraphs, tabs, justification, and margins. The student creates/modifies and uses spreadsheets to perform simple calculations (+, -, *, /). The student uses presentation software and uses design templates to create a minimum of 3 slides.

- **Partial Mastery**

The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in technology productivity tools. Performance needs further development. The student requires some assistance to use the editing functions of a word processor (e.g., spell check, grammar check, thesaurus) and review paragraphs, tabs, justification, and margins. The student requires some assistance to create/modify and use spreadsheets to perform simple calculations (+, -, *, /). The student requires some assistance to use presentation software and design templates to create a slide.

- **Novice**

The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in technology productivity tools. Performance needs considerable development. The student requires considerable assistance to use a word processing program to create and format a document (e.g., paragraph, tabs, justification margins, cut and paste, spell-check, and text formatting). The student requires considerable assistance to enter data into a spreadsheet. The student requires group assistance and support to create a multimedia project.

Standard 4: Technology Communication Tools (TEC.S.4)

Students will:

- use telecommunications to collaborate, publish, and interact with peers, experts, and other audiences; and
- use a variety of media and formats to communicate information and ideas effectively to multiple audiences.

Technology Communication Tools Objectives

Students will:

TEC.5.4.1 Participate in curriculum-based telecommunication projects as a class activity.

Performance Descriptors (TEC.PD.5.4)

- **Distinguished**

The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in technology communication tools. The student demonstrates leadership in class activities involving curriculum-based telecommunication projects.

- **Above Mastery**

The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge in skills that exceed the standard in technology communication tools. The student participates in curriculum-based telecommunication projects as small group project.

- **Mastery**

The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in technology communication tools. The student participates in curriculum-based telecommunication projects as a class activity.

- **Partial Mastery**

The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in technology communication tools. Performance needs further development. The student requires additional guidance to participate in curriculum-based telecommunications projects as a class activity.

- **Novice**

The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in technology communication tools. Performance needs considerable development. The student makes minimal contribution to group curriculum-based telecommunications projects.

Standard 5: Technology Research Tools (TEC.S.5)

Students will:

- use technology to locate, evaluate, and collect information from a variety of sources;
- use technology tools to process data and report results; and
- evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.

Technology Research Tools Objectives

Students will:

TEC.5.5.1 use telecommunications to locate information as a group/class project.

TEC.5.5.2 evaluate information found via telecommunications for appropriateness, content and usefulness.

Performance Descriptors (TEC.PD.5.5)

- **Distinguished**

The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in technology research tools. The student independently uses telecommunications to locate and organize information for a project. The student evaluates information found via telecommunications for appropriateness, content and usefulness. The student summarizes and applies information.

- **Above Mastery**

The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge in skills that exceed the standard in technology research tools. The student as part of a small group uses telecommunications to locate and select information for group/class project. The student evaluates information found via telecommunications for appropriateness, content, and usefulness.

- **Mastery**

The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in technology research tools. The student uses telecommunications to locate information as a group/class project. The student evaluates information found via telecommunications for appropriateness, content, and usefulness.

- **Partial Mastery**

The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in technology research tools. Performance needs further development. The student requires individual guidance to use telecommunications to locate information as a group/class project. The student requires assistance to evaluate information found via telecommunications for appropriateness, content, and usefulness.

- **Novice**

The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in technology research tools. Performance needs considerable development. The student makes minimal and/or inappropriate contributions to locating information in group/class telecommunications projects. The student constructs incomplete evaluations of information found via telecommunications for appropriateness, content, and usefulness.

Standard 6: Technology Problem-solving and Decision-making Tools (TEC.S.6)

Students will:

- use technology resources for solving problems and making informed decisions; and
- employ technology in the development of strategies for solving problems in the real world.

Technology Problem-solving and Decision-making Tools Objectives

Students will:

TEC.5.6.1 select the appropriate technology resource to solve problems in content area.

Performance Descriptors (TEC.PD.5.6)

- **Distinguished**

The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in technology problem-solving and decision-making tools. The student selects, applies and assists others in using the appropriate technology resources to solve problems in content area.

- **Above Mastery**

The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge in skills that exceed the standard in technology problem-solving and decision-making tools. The student selects and applies the appropriate technology resource to solve problems in content area.

- **Mastery**

The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in technology problem-solving and decision-making tools. The student selects the appropriate technology resource to solve problems in content area.

- **Partial Mastery**

The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in technology problem-solving and decision-making tools. Performance needs further development. The student requires assistance to select the appropriate technology resource to solve problems in content area.

- **Novice**

The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in technology problem-solving and decision-making tools. Performance needs considerable development. The student requires extensive assistance to select the appropriate technology resource to solve problems in content area.

Sixth Grade Technology Standards and Objectives

The sixth grade student will demonstrate proficiency in the use of technology and a sound understanding of the nature and operation of technology systems. Students will understand the issues related to protection of software and hardware. The student will model ethical behavior in the use of technology systems, information and software. Students will use advanced features of word processing software, enter and edit data in a spreadsheet, collaboratively develop a simple database, and use presentation software with appropriate design layouts. The student will continue to use telecommunications to gather information and evaluate information for appropriateness, content and usefulness. The student will use technology resources for self-directed problem solving. The student will use resources provided through statewide technology resources.

Standard 1: Basic Operations and Concepts (TEC.S.1)

Students will:

- demonstrate a sound understanding of the nature and operation of technology systems; and
- demonstrate proficiency in the use of technology.

Basic Operations and Concepts Objectives

Students will:

- TEC.6.1.1 use touch typing skills to improve speed and accuracy.
- TEC.6.1.2 recognize the need for protection of software and hardware from computer viruses and vandalism.
- TEC.6.1.3 continue to manage and maintain technology tools (e.g., properly shut down system(s), load printer paper).

Performance Descriptors (TEC.PD.6.1)

- **Distinguished**

The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in technology basic operations and concepts. The student performing at the distinguished level is proficient in touch-typing skills and independently applies skills in appropriate subject areas. The student models and instructs others in strategies for the protection of software and hardware from computer viruses and vandalism. The student instructs others in diagnosing and solving common technology problems and manages and maintains technology tools (e.g., properly shut down system(s), load printer paper).

- **Above Mastery**

The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge and skills that exceeds the standard in technology problem-solving and decision-making tools. The student performing at the above mastery level uses touch-typing skills to improve speed and accuracy and independently applies skills in appropriate subject areas. The student applies strategies to protect software and hardware from computer viruses and vandalism. The student assists others in diagnosing and solving common technology problems and manages and maintains technology tools (e.g., properly shut down system(s), load printer paper).

- **Mastery**

The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in technology basic operations and concepts. The student uses touch-typing skills to improve speed and accuracy. The student recognizes the need for protection of software and hardware from computer viruses and vandalism. The student continues to manage and maintain technology tools (e.g., properly shut down system(s), load printer paper).

- **Partial Mastery**

The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in technology basic operations and concepts. Performance needs further development. The student uses touch-typing skills but needs further development to improve speed and accuracy. The student is developing recognition of the need for protection of software and hardware from computer viruses and vandalism. The student requires assistance to manage and maintain technology tools (e.g., properly shut down system(s), load printer paper).

- **Novice**

The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in technology basic operations and concepts. Performance needs considerable development. The student uses touch-typing skills but lacks speed and accuracy. The student seldom recognizes the need for protection of software and hardware from computer viruses and vandalism. The student improperly manages and maintains technology tools (e.g., properly shut down system(s), load printer paper).

Standard 2: Social, Ethical and Human Issues (TEC.S.2)

Students will:

- demonstrate understanding of the ethical, cultural, and societal issues related to technology;
- practice responsible use of technology systems, information, and software; and
- develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.

Social, Ethical and Human Issues Objectives

Students will:

TEC.6.2.1 model ethical behavior relating to security, privacy, passwords and personal information.

TEC.6.2.2 demonstrate an understanding of copyright by citing sources of copyrighted materials in papers, projects and multimedia presentations.

Performance Descriptors (TEC.PD.6.2)

- **Distinguished**

The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in social, ethical and human issues in technology. The student applies and justifies the need for ethical behavior relating to security, privacy, passwords, and personal information. The student independently demonstrates an understanding of copyright by citing sources of copyrighted materials in papers, projects, and multimedia presentations. The student recognizes incorrect applications (e.g., plagiarism, inaccurate citations) and their consequences.

- **Above Mastery**

The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge in skills that exceed the standard in social, ethical and human issues in technology. The student applies ethical behavior relating to security, privacy, passwords, and personal information. The student independently demonstrates an understanding of copyright by citing sources of copyrighted materials in papers, projects, and multimedia presentations.

- **Mastery**

The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in social, ethical and human issues in technology. The student models ethical behavior relating to security, privacy, passwords, and personal information. The student demonstrates an understanding of copyright by citing sources of copyrighted materials in papers, projects, and multimedia presentations.

- **Partial Mastery**

The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in social, ethical and human issues in technology. Performance needs further development. The student exhibits inconsistencies in ethical behavior relating to security, privacy, passwords, and personal information. The student demonstrates an understanding of copyright but inconsistently and/or incorrectly cites sources of copyrighted materials in papers, projects, and multimedia presentations.

- **Novice**

The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in social, ethical and human issues in technology. Performance needs considerable development. The student requires direct supervision to apply ethical behaviors relating to security, privacy, passwords, and personal information. The student has an understanding of copyright but fails to cite sources of copyrighted materials in papers, projects, and multimedia presentations.

Standard 3: Technology Productivity Tools (TEC.S.3)

Students will:

- use technology tools to enhance learning, increase productivity, and promote creativity; and
- use productivity tools to collaborate in constructing technology-enhanced models, preparing publications, and producing other creative works.

Technology Productivity Tools Objectives

Students will:

TEC.6.3.1 use advanced features and utilities of a word processor (e.g., bullets, tables, find and replace) and review spell check, grammar check, thesaurus.

TEC.6.3.2 enter and edit data into a prepared spreadsheet to test simple "what-if?" statements and equations.

TEC.6.3.3 use presentation software demonstrating appropriate design layouts and formatting features (e.g., fonts, color, background designs) to effectively communicate.

Performance Descriptors (TEC.PD.6.3)

- **Distinguished**

The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in technology productivity tools. The student determines and guides others in the appropriate use of the advanced features and utilities of a word processor to enhance class assignments (e.g., bullets, tables, find and replace, spell check, grammar check, and thesaurus). The student provides assistance to other in entering and editing data in a prepared spreadsheet, testing simple "what-if?" statements and equations and explaining the results. The student teaches others the appropriate use of presentation software, demonstrating appropriate design layouts and formatting features (e.g., fonts, color, background designs) to effectively communicate. The student evaluates and justifies the effectiveness of the features to the purpose of the presentation.

- **Above Mastery**

The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge in skills that exceed the standard in technology productivity tools. The student determines appropriate use of the advanced features and utilities of a word processor to enhance class assignments (e.g., bullets, tables, find and replace, spell check, grammar check, and thesaurus). The student enters and edits data in a prepared spreadsheet to test simple "what-if?" statements and equations and explains the results. The student uses presentation software demonstrating appropriate design layouts and formatting features (e.g., fonts, color, background designs) to effectively communicate. The student evaluates the effectiveness of the features to the purpose of the presentation.

- **Mastery**

The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in technology productivity tools. The student uses advanced features and utilities of a word processor (e.g., bullets, tables, find and replace) and reviews the skills of spell check, grammar check, and thesaurus. The student enters and edits data in a prepared spreadsheet to test simple "what-if?" statements and equations. The student uses presentation software demonstrating appropriate design layouts and formatting features (e.g., fonts, color, background designs) to effectively communicate.

- **Partial Mastery**

The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in technology productivity tools. Performance needs further development. The student needs considerable assistance in using advanced features and utilities of a word processor (e.g., bullets, tables, find and replace) and requires repeated review of the skills of spell check, grammar check, and thesaurus. The student enters and edits data in a prepared spreadsheet but cannot test simple "what-if?" statements and equations. The student uses presentation software but chooses inappropriate design layouts and formatting features (e.g., fonts, color, background designs) to effectively communicate.

- **Novice**

The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in technology productivity tools. Performance needs considerable development. The student cannot use advanced features and utilities of a word processor (e.g., bullets, tables, find and replace) and requires repeated review of the skills of spell check, grammar check, and thesaurus. The student needs assistance to enter and edit data in a prepared spreadsheet and cannot test simple "what-if?" statements and equations. The student uses presentation software but cannot choose design layouts and formatting features (e.g., fonts, color, background designs).

Standard 4: Technology Communication Tools (TEC.S.4)

Students will:

- use telecommunications to collaborate, publish, and interact with peers, experts, and other audiences; and
- use a variety of media and formats to communicate information and ideas effectively to multiple audiences.

Technology Communication Tools Objectives

Students will:

TEC.6.4.1 use telecommunication tools to collaborate with an expert in gathering information for a class assignment.

Performance Descriptors (TEC.PD.6.4)

- **Distinguished**

The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in technology communication tools. The student identifies an appropriate expert resource with whom to collaborate via telecommunications in gathering information for a class assignment. The student analyzes the information for relevance.

- **Above Mastery**

The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge in skills that exceed the standard in technology communication tools. The student identifies an appropriate expert resource with whom to collaborate via telecommunications in gathering information for a class assignment.

- **Mastery**

The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in technology communication tools. The student uses telecommunications tools to collaborate with an expert in gathering information for a class assignment.

- **Partial Mastery**

The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in technology communication tools. Performance needs further development. The student requires direction to use telecommunications tools to collaborate with an expert in gathering information for a class assignment.

- **Novice**

The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in technology communication tools. Performance needs considerable development. The student requires considerable assistance to use telecommunications tools to collaborate with an expert in gathering information for a class assignment.

Standard 5: Technology Research Tools (TEC.S.5)

Students will:

- use technology to locate, evaluate, and collect information from a variety of sources;
- use technology tools to process data and report results; and
- evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.

Technology Research Tools Objectives

Students will:

TEC.6.5.1 develop a search strategy using keywords that define the topic.

TEC.6.5.2 evaluate information found via telecommunications for validity, appropriateness, content and usefulness.

Performance Descriptors (TEC.PD.6.5)

- **Distinguished**

The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in technology research tools. The student develops complex search strategies using keywords that define the topic and expands/refines the search based upon the results. The student evaluates information found via telecommunications for validity, appropriateness, content, and usefulness and justifies conclusions drawn.

- **Above Mastery**

The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge in skills that exceed the standard in technology research tools. The student develops search strategies using keywords that define the topic and expands/refines the search based upon the results. The student evaluates information found via telecommunications for validity, appropriateness, content, and usefulness and discusses conclusions drawn.

- **Mastery**

The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in technology research tools. The student develops a search strategy using keywords that define the topic. The student evaluates information found via telecommunications for validity, appropriateness, content, and usefulness.

- **Partial Mastery**

The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in technology research tools. Performance needs further development. With direct assistance, the student develops a search strategy using key words that define the topic. The student needs assistance to evaluate information found via telecommunications for validity, appropriateness, content, and usefulness.

- **Novice**

The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in technology research tools. Performance needs considerable development. The student requires considerable assistance to develop a search strategy using key words that define the topic. The student does not build accurate conclusions regarding validity, appropriateness, content, and usefulness of information found via telecommunications.

Standard 6: Technology Problem-solving and Decision-making Tools (TEC.S.6)

Students will:

- use technology resources for solving problems and making informed decisions; and
- employ technology in the development of strategies for solving problems in the real world.

Technology Problem-solving and Decision-making Tools Objectives

Students will:

TEC.6.6.1 use technology resources for problem solving, self-directed learning, and extended learning activities.

Performance Descriptors (TEC.PD.6.6)

- **Distinguished**

The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in technology problem-solving and decision-making tools. The student uses technology resources to create and design a unique and innovative solution to problems and to independently analyze a variety of problem-solving approaches. The student uses technology resources in self-directed learning and extended learning activities.

- **Above Mastery**

The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge in skills that exceed the standard in technology problem-solving and decision-making tools. The student compares and contrasts a variety of technology resources in order to select a method for problem solving. The student uses technology resources in self-directed learning and extended learning activities.

- **Mastery**

The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in technology problem-solving and decision-making tools. The student uses technology resources for problem-solving, self-directed learning, and extended learning activities.

- **Partial Mastery**

The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in technology problem-solving and decision-making tools. Performance needs further development. The student relies on traditional designs for using technology resources for problem-solving, self-directed learning, and extended learning activities. Given a problem, student has to work collaboratively to develop a problem-solving method using technology. The student uses technology in a limited way for self-directed learning.

- **Novice**

The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in technology problem-solving and decision-making tools. Performance needs considerable development. The student is unable to develop a method for problem solving using technology. The student needs considerable development to use technology for self-directed learning and extended learning activities.

Seventh Grade Technology Standards and Objectives

The seventh grade student will demonstrate proficiency in the use of technology and a sound understanding of the nature and operation of technology systems. The student will practice responsible use of technology systems, information and software. The student will use advanced features and utilities of word processing software, select appropriate spreadsheet functions to solve problems, create a database as a group activity, and use presentation software with graphics. The seventh grade student will use telecommunication tools to collaborate, publish and interact with peers, experts and other audiences. The student will produce a product using online sources, evaluate the information, and use other technology resources for self-directed problem solving. The student will use resources provided through statewide technology resources.

Standard 1: Basic Operations and Concepts (TEC.S.1)

Students will:

- demonstrate a sound understanding of the nature and operation of technology systems; and
- demonstrate proficiency in the use of technology.

Basic Operations and Concepts Objectives

Students will:

TEC.7.1.1 use touch typing skills to improve speed and accuracy.

TEC.7.1.2 recognize the need for protection of software and hardware from computer viruses and vandalism.

TEC.7.1.3 continue to manage and maintain technology tools (e.g., properly shut down system(s), load printer paper).

Performance Descriptors (TEC.PD.7.1)

- **Distinguished**

The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in technology basic operations and concepts. The student performing at the distinguished level is proficient in touch-typing skills and independently applies skills in appropriate subject areas. The student models and instructs others in strategies for the protection of software and hardware from computer viruses and vandalism. The student instructs others in diagnosing and solving common technology problems and manages and maintains technology tools (e.g., properly shut down system(s), load printer paper).

- **Above Mastery**

The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge and skills that exceeds the standard in technology problem-solving and decision-making tools. The student performing at the above mastery level uses touch-typing skills to improve speed and accuracy and independently applies skills in appropriate subject areas. The student applies strategies to protect software and hardware from computer viruses and vandalism. The student assists others in diagnosing and solving common technology problems and manages and maintains technology tools (e.g., properly shut down system(s), load printer paper).

- **Mastery**

The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in technology basic operations and concepts. The student uses touch-typing skills to improve speed and accuracy. The student recognizes the need for protection of software and hardware from computer viruses and vandalism. The student continues to manage and maintain technology tools (e.g., properly shut down system(s), load printer paper).

- **Partial Mastery**

The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in technology basic operations and concepts. Performance needs further development. The student uses touch-typing skills but needs further development to improve speed and accuracy. The student is developing recognition of the need for protection of software and hardware from computer viruses and vandalism. The student requires assistance to manage and maintain technology tools (e.g., properly shut down system(s), load printer paper).

- **Novice**

The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in technology basic operations and concepts. Performance needs considerable development. The student uses touch-typing skills but lacks speed and accuracy. The student seldom recognizes the need for protection of software and hardware from computer viruses and vandalism. The student improperly manages and maintains technology tools (e.g., properly shut down system(s), load printer paper).

Standard 2: Social, Ethical and Human Issues (TEC.S.2)

Students will:

- demonstrate understanding of the ethical, cultural, and societal issues related to technology;
- practice responsible use of technology systems, information, and software; and
- develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.

Social, Ethical and Human Issues Objectives

Students will:

TEC.7.2.1 model ethical behavior relating to security, privacy, passwords, and personal information.

TEC.7.2.2 demonstrate an understanding of copyright by citing sources of copyrighted materials in papers, projects and multimedia presentations.

Performance Descriptors (TEC.PD.7.2)

- **Distinguished**

The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in social, ethical and human issues in technology. The student applies and justifies the need for ethical behavior relating to security, privacy, passwords, and personal information. The student independently demonstrates an understanding of copyright by citing sources of copyrighted materials in papers, projects, and multimedia presentations. The student recognizes incorrect applications (e.g., plagiarism, inaccurate citations) and their consequences.

- **Above Mastery**

The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge in skills that exceed the standard in social, ethical and human issues in technology. The student applies ethical behavior relating to security, privacy, passwords, and personal information. The student independently demonstrates an understanding of copyright by citing sources of copyrighted materials in papers, projects, and multimedia presentations.

- **Mastery**

The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in social, ethical and human issues in technology. The student models ethical behavior relating to security, privacy, passwords, and personal information. The student demonstrates an understanding of copyright by citing sources of copyrighted materials in papers, projects, and multimedia presentations.

- **Partial Mastery**

The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in social, ethical and human issues in technology. Performance needs further development. The student exhibits inconsistencies in ethical behavior relating to security, privacy, passwords, and personal information. The student demonstrates an understanding of copyright but inconsistently and/or incorrectly cites sources of copyrighted materials in papers, projects, and multimedia presentations.

- **Novice**

The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in social, ethical and human issues in technology. Performance needs considerable development. The student requires direct supervision to apply ethical behaviors relating to security, privacy, passwords, and personal information. The student has an understanding of copyright but fails to cite sources of copyrighted materials in papers, projects, and multimedia presentations.

Standard 3: Technology Productivity Tools (TEC.S.3)

Students will:

- use technology tools to enhance learning, increase productivity, and promote creativity; and
- use productivity tools to collaborate in constructing technology-enhanced models, preparing publications, and producing other creative works.

Technology Productivity Tools Objectives

Students will:

TEC.7.3.1 use the advanced features and utilities of a word processor (e.g., help menu, toolbars) and review bullets, tables, grammar check, find and replace.

TEC.7.3.2 select appropriate spreadsheet functions to organize data and solve problems.

TEC.7.3.3 use presentation software demonstrating the use of animation and graphics.

Performance Descriptors (TEC.PD.7.3)

- **Distinguished**

The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in technology productivity tools. The student determines and assists others in the appropriate use of the advanced features and utilities of a word processor to enhance class assignments (e.g., help menu, tool bars, bullets, tables, grammar check, find and replace.) The student provides assistance to others in selecting appropriate spreadsheet functions to organize data and solve problems, and in evaluating the relevancy of the results. The student models the use of presentation software, incorporating animation and graphics and evaluating the effectiveness of the features to the purpose of the presentation.

- **Above Mastery**

The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge in skills that exceed the standard in technology productivity tools. The student determines appropriate use of the advanced features and utilities of a word processor to enhance class assignments (e.g., help menu, tool bars, bullets, tables, grammar check, find and replace.) The student selects appropriate spreadsheet functions to organize data and solve problems, and the student evaluates the relevancy of the results. The student uses presentation software incorporating animation and graphics, and the student evaluates the effectiveness of the features to the purpose of the presentation.

- **Mastery**

The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in technology productivity tools. The student uses the advanced features and utilities of a word processor (e.g., help menu, tool bars) and reviews bullets, tables, grammar check, find and replace. The student selects appropriate spreadsheet functions to organize data and solve problems. The student uses presentation software incorporating animation and graphics.

- **Partial Mastery**

The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in technology productivity tools. Performance needs further development. The student requires some assistance to use the advanced features and utilities of a word processor (e.g., help menu, tool bars, bullets, tables, grammar check, find and replace). The student requires some assistance to select appropriate spreadsheet functions to organize data and solve problems. The student requires some assistance to use presentation software.

- **Novice**

The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in technology productivity tools. Performance needs considerable development. The student requires consistent direction with the following tasks: using advanced features and utilities of a word processor e.g., help menu, tool bars, bullets, tables, grammar check, find and replace); selecting appropriate spreadsheet functions to organize data and solve problems; and using presentation software incorporating animation and graphics.

Standard 4: Technology Communication Tools (TEC.S.4)

Students will:

- use telecommunications to collaborate, publish, and interact with peers, experts, and other audiences; and
- use a variety of media and formats to communicate information and ideas effectively to multiple audiences.

Technology Communication Tools Objectives

Students will:

TEC.7.4.1 use telecommunication tools to collaborate with an expert in gathering information for a class assignment.

Performance Descriptors (TEC.PD.7.4)

- **Distinguished**

The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in technology communication tools. The student identifies an appropriate expert resource with whom to collaborate via telecommunications in gathering information for a class assignment. The student analyzes the information for relevance.

- **Above Mastery**

The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge in skills that exceed the standard in technology communication tools. The student identifies an appropriate expert resource with whom to collaborate via telecommunications in gathering information for a class assignment.

- **Mastery**

The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in technology communication tools. The student uses telecommunications tools to collaborate with an expert in gathering information for a class assignment.

- **Partial Mastery**

The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in technology communication tools. Performance needs further development. The student requires direction to use telecommunications tools to collaborate with an expert in gathering information for a class assignment.

- **Novice**

The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in technology communication tools. Performance needs considerable development. The student requires considerable assistance to use telecommunications tools to collaborate with an expert in gathering information for a class assignment.

Standard 5: Technology Research Tools (TEC.S.5)

Students will:

- use technology to locate, evaluate, and collect information from a variety of sources;
- use technology tools to process data and report results; and
- evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.

Technology Research Tools Objectives

Students will:

TEC.7.5.1 produce a product using online sources.

TEC.7.5.2 evaluate information found from electronic sources for validity, appropriateness, content and usefulness.

Performance Descriptors (TEC.PD.7.5)

- **Distinguished**

The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in technology research tools. The student produces a product appropriate to the audience using online sources, lists the steps of the research process, and evaluates the outcome. The student evaluates information found via telecommunications for validity, appropriateness, content, and usefulness and justifies conclusions drawn.

- **Above Mastery**

The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge in skills that exceed the standard in technology research tools. The student produces a product appropriate to the audience and purpose using online sources. The student evaluates information found via telecommunications for validity, appropriateness, content, and usefulness and discusses conclusions drawn.

- **Mastery**

The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in technology research tools. The student produces a product using online sources. The student evaluates information found from electronic sources for validity, appropriateness, content, and usefulness.

- **Partial Mastery**

The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in technology research tools. Performance needs further development. The student produces an incomplete product using online sources. The student makes weak and inappropriate evaluations of information found from electronic sources for validity, appropriateness, content, and usefulness.

- **Novice**

The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in technology research tools. Performance needs considerable development. The student does not build accurate conclusions regarding validity, appropriateness, content, and usefulness of information found via telecommunications. The student is unable to make good selection of online sources in order to complete a research product.

Standard 6: Technology Problem-solving and Decision-making Tools (TEC.S.6)

Students will:

- use technology resources for solving problems and making informed decisions; and
- employ technology in the development of strategies for solving problems in the real world.

Technology Problem-solving and Decision-making Tools Objectives

Students will:

TEC.7.6.1 use appropriate computer-based productivity tools to create and modify solutions to problems.

Performance Descriptors (TEC.PD.7.6)

- **Distinguished**

The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in technology problem-solving and decision-making tools. The student evaluates options in order to select and integrate the most appropriate computer-based productivity tools to create and modify solutions to complex problems.

- **Above Mastery**

The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge in skills that exceed the standard in technology problem-solving and decision-making tools. The student evaluates options in order to select and use the most appropriate computer-based productivity tools to create and modify solutions to problems.

- **Mastery**

The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in technology problem-solving and decision-making tools. The student uses appropriate computer-based productivity tools to create and modify solutions to problems.

- **Partial Mastery**

The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in technology problem-solving and decision-making tools. Performance needs further development. The student participates in group activities involving the use of technology problem-solving and decision-making tools but is unable to make appropriate choices independently.

- **Novice**

The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in technology problem-solving and decision-making tools. Performance needs considerable development. The student is unable to contribute to group activities involving the use of technology problem-solving and decision-making tools and is unable to make appropriate choices independently.

Eighth Grade Technology Standards and Objectives

The eighth grade student will demonstrate proficiency in the use of technology and a sound understanding of the nature and operation of technology systems. The student will practice responsible use of technology systems, information and software. Students will begin to integrate two or more productivity tools into a document and use expanded features of spreadsheet, database and presentation software. Eighth grade students will use telecommunications to publish information and produce a project using online and non-electronic resources. The student will evaluate the information and cite its source. The student will select and use technology tools to solve problems and make decisions related to content areas. The student will use resources provided through statewide technology resources.

Standard 1: Basic Operations and Concepts (TEC.S.1)

Students will:

- demonstrate a sound understanding of the nature and operation of technology systems; and
- demonstrate proficiency in the use of technology.

Basic Operations and Concepts Objectives

Students will:

TEC.8.1.1 use touch typing skills to improve speed and accuracy.

TEC.8.1.2 recognize the need for protection of software and hardware from computer viruses and vandalism.

TEC.8.1.3 continue to manage and maintain technology tools (e.g., properly shut down system(s), load printer paper).

Performance Descriptors (TEC.PD.8.1)

■ **Distinguished**

The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in technology basic operations and concepts. The student performing at the distinguished level applies touch-typing skills with speed and accuracy to complete tasks. The student employs troubleshooting strategies to hardware and software problems and makes appropriate choices related to hardware, software, and connectivity (e.g., virus software, properly shutting down systems, resolving more complex printer problems). The student instructs others in solving hardware and software problems.

■ **Above Mastery**

The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge in skills that exceed the standard in technology basic operations and concepts. The student performing at the above mastery level applies touch-typing skills with speed and accuracy to complete tasks. The student makes informed choices related to hardware, software, and connectivity including troubleshooting of routine hardware and software problems (virus software, properly shutting down systems, resolving basic printer problems).

■ **Mastery**

The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in technology basic operations and concepts. The student performing at the mastery level uses touch-typing skills to improve speed and accuracy. The student recognizes the need for protection of software and hardware from computer viruses and vandalism and continues to manage and maintain technology tools (e.g., properly shut down systems, load printer paper)

■ **Partial Mastery**

The student performing at the partial mastery level demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in technology basic operations and concepts with minimal assistance. Performance needs further development. The student uses touch-typing skills to improve speed but lacks accuracy. The student recognizes the need for protection of software and hardware from computer viruses and vandalism and continues to manage and maintain technology tools with some assistance (e.g., properly shut down systems, load printer paper).

- **Novice**

The student performing at the novice level demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in technology basic operations and concepts with extensive support and direction. Performance needs considerable development. The student uses touch-typing skills but demonstrates limited improvement in speed and accuracy. The student recognizes the need for protection of software and hardware from computer viruses and vandalism and continues to manage and maintain technology tools with considerable assistance (e.g., properly shut down systems, load printer paper).

Standard 2: Social, Ethical and Human Issues (TEC.8.2)

Students will:

- demonstrate understanding of the ethical, cultural, and societal issues related to technology;
- practice responsible use of technology systems, information, and software; and
- develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.

Social, Ethical and Human Issues Objectives

Students will:

TEC.8.2.1 model ethical behavior relating to security, privacy, passwords and personal information.

TEC.8.2.2 demonstrate an understanding of copyright by citing sources of copyrighted materials in papers, projects and multimedia presentations.

Performance Descriptors (TEC.PD.8.2)

- **Distinguished**

The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in social, ethical and human issues in technology. The student applies and justifies the need for ethical behavior relating to security, privacy, passwords and personal information. The student independently demonstrates an understanding of copyright by citing sources of copyrighted materials in papers, projects, and multimedia presentations. The student recognizes incorrect applications (e.g., plagiarism, inaccurate citations) and their consequences.

- **Above Mastery**

The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge in skills that exceed the standard in social, ethical and human issues in technology. The student applies ethical behavior relating to security, privacy, passwords and personal information. The student independently demonstrates an understanding of copyright by citing sources of copyrighted materials in papers, projects, and multimedia presentations.

- **Mastery**

The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in social, ethical and human issues in technology. The student models ethical behavior relating to security, privacy, passwords and personal information. The student demonstrates an understanding of copyright by citing sources of copyrighted materials in papers, projects, and multimedia presentations.

- **Partial Mastery**

The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in social, ethical and human issues in technology. Performance needs further development. The student models ethical behavior relating to security, privacy, passwords and personal information. The student demonstrates an understanding of copyright but inconsistently and/or incorrectly cites sources of copyrighted materials in papers, projects, and multimedia presentations.

- **Novice**

The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in social, ethical and human issues in technology. Performance needs considerable development. The student requires direct supervision to apply ethical behaviors relating to security, privacy, passwords, and personal information. The student has an understanding of copyright but fails to cite sources of copyrighted materials in papers, projects, and multimedia presentations.

Standard 3: Technology Productivity Tools (TEC.S.3)

Students will:

- use technology tools to enhance learning, increase productivity, and promote creativity; and
- use productivity tools to collaborate in constructing technology-enhanced models, preparing publications, and producing other creative works.

Technology Productivity Tools Objectives

Students will:

- TEC.8.3.1 integrate two or more productivity tools into a document including, but not limited to tables, charts, graphs, inserting hyperlinks, and graphics.
- TEC.8.3.2 use spreadsheets to explore various formulas, functions and relationships.
- TEC.8.3.3 begin to use databases relevant to class assignments.
- TEC.8.3.4 use presentation software's advanced features such as inserting pictures, charts, objects and hyperlinks.

Performance Descriptors (TEC.PD.8.3)

- **Distinguished**

The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in technology productivity tools. The student fully integrates advanced application skills for personal and academic productivity. The student uses spreadsheets to create various formulas, functions and relationships and demonstrates skills in databases relevant to class assignments. The student can instruct others in the use of presentation software's advanced features such as inserting pictures, charts, objects, and hyperlinks.

- **Above Mastery**

The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge and skills that exceeds the standard in technology productivity tools. The student consistently integrates productivity tools into academic productivity including, but not limited to tables, charts, graphs, inserting hyperlinks, and graphics. The student uses spreadsheets to create basic formulas, functions and relationships and begins to use databases relevant to class assignments. The student exhibits creativity in the use of presentation software's advanced features such as inserting pictures, charts, objects, and hyperlinks.

- **Mastery**

The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in technology productivity tools. The student integrates two or more productivity tools into a document including, but not limited to tables, charts, graphs, inserting hyperlinks, and graphics. The student uses spreadsheets to explore various formulas, functions and relationships and begins to use databases relevant to class assignments. The student uses presentation software's advanced features such as inserting pictures, charts, objects, and hyperlinks.

- **Partial Mastery**

The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in technology productivity tools. Performance needs further development. The student requires assistance to integrate two or more productivity tools into a document including, but not limited to tables, charts, graphs, inserting hyperlinks, and graphics. The student begins to use spreadsheets to explore basic formulas, functions and relationships and explores the use of databases relevant to class assignments. The student uses presentation software's intermediate features such as inserting pictures, animation, and graphics.

- **Novice**

The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in technology productivity tools. Performance needs considerable development. The student rarely integrates productivity tools into a document including, but not limited to tables, charts, graphs, inserting hyperlinks, and graphics. With considerable direction, the student begins to use spreadsheets to explore basic formulas, functions and relationships. The student uses presentation software's basic formatting features such as fonts, color, and background designs.

Standard 4: Technology Communication Tools (TEC.S.4)

Students will:

- use telecommunications to collaborate, publish, and interact with peers, experts, and other audiences; and
- use a variety of media and formats to communicate information and ideas effectively to multiple audiences.

Technology Communication Tools Objectives

Students will:

TEC.8.4.1 use telecommunications to share and publish information (e.g., email attachments, web pages).

Performance Descriptors (TEC.PD.8.4)

- **Distinguished**

The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in technology communication tools. The student exhibits creativity in and instructs others in the use of telecommunications to share and publish information (e.g., email attachments, web pages).

- **Above Mastery**

The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge and skills that exceeds the standard in technology communication tools. The student exhibits creativity in the use of telecommunications to share and publish information (e.g., email attachments, web pages).

- **Mastery**

The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in technology communication tools. The student uses telecommunications to share and publish information (e.g., email attachments, web pages).

- **Partial Mastery**

The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in technology communication tools. Performance needs further development. The student requires assistance to use telecommunications to share and publish information (e.g., email attachments, web pages).

- **Novice**

The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in technology communication tools. Performance needs considerable development. The student requires considerable direction to use basic telecommunications to share and publish information.

Standard 5: Technology Research Tools (TEC.S.5)

Students will:

- use technology to locate, evaluate, and collect information from a variety of sources;
- use technology tools to process data and report results; and
- evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.

Technology Research Tools Objectives

Students will:

TEC.8.5.1 produce a product using online sources combined with other resources.

TEC.8.5.2 conduct online research and evaluate the information found as to the validity, appropriateness, content and usefulness.

Performance Descriptors (TEC.PD.8.5)

- **Distinguished**

The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in technology research tools. The student produces a sophisticated product using a variety of strategies to acquire information from electronic resources. The student conducts online research and analyzes and draws inferences from information found as to the validity, appropriateness, content and usefulness.

- **Above Mastery**

The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge and skills that exceeds the standard in technology research tools. The student produces a product using a variety of strategies to acquire information from electronic resources. The student conducts online research and analyzes the information found as to the validity, appropriateness, content and usefulness.

- **Mastery**

The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in technology research tools. The student produces a product using online sources combined with other resources. The student conducts online research and evaluates the information found as to the validity, appropriateness, content and usefulness.

- **Partial Mastery**

The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in technology research tools. Performance needs further development. The student requires assistance to produce a product using online sources combined with other resources. The student conducts online research but requires collaborate effort to evaluate the information found as to the validity, appropriateness, content and usefulness.

- **Novice**

The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in technology research tools. Performance needs considerable development. The student requires considerable assistance to produce a product using online sources combined with other resources. The student conducts online research and includes information without assessment of its validity, appropriateness, content and usefulness.

Standard 6: Technology Problem-solving and Decision-making Tools (TEC.S.6)

Students will:

- use technology resources for solving problems and making informed decisions; and
- employ technology in the development of strategies for solving problems in the real world.

Technology Problem-solving and Decision-making Tools Objectives

Students will:

TEC.8.6.1 select and use technology tools to solve problems and make decisions related to content areas.

Performance Descriptors (TEC.PD.8.6)

- **Distinguished**

The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in technology problem-solving and decision-making tools. The student evaluates options in order to select and integrate the most appropriate computer-based productivity tools to solve problems and formulate and justify decisions related to content areas and real-world situations.

- **Above Mastery**

The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge and skills that exceeds the standard in technology problem-solving and decision-making tools. The student evaluates options in order to select and use the most appropriate computer-based productivity tools to solve problems and make decisions related to content areas.

- **Mastery**

The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in technology problem-solving and decision-making tools. The student selects and uses technology tools to solve problems and make decisions related to content areas.

- **Partial Mastery**

The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in technology problem-solving and decision-making tools. Performance needs further development. The student requires assistance to use technology tools to solve problems and make decisions related to content areas.

- **Novice**

The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in technology problem-solving and decision-making tools. Performance needs considerable development. The student requires considerable direction to use technology tools to solve simple problems and participate collaboratively to make decisions related to content areas.

Ninth - Twelfth Grade Technology Standards and Objectives

The high school student will demonstrate proficiency in the use of technology and a sound understanding of the nature and operation of technology systems. The student will practice responsible use of technology systems, information and software. The student will integrate advanced technology application skills in the use of word processor, database, spreadsheet and presentation software. The student will select and use appropriate technology tools to efficiently collect, analyze and display data that is relevant to classroom assignments. The high school student will use telecommunications and a variety of media and formats to communicate information effectively to multiple audiences. The student will use technology resources for solving problems and making informed decisions. The student will use resources provided through statewide technology resources.

Standard 1: Basic Operations and Concepts (TEC.S.1)

Students will:

- demonstrate a sound understanding of the nature and operation of technology systems; and
- demonstrate proficiency in the use of technology.

Basic Operations and Concepts Objectives

Students will:

TEC.9-12.1.1 use data input skills appropriate to the task.

TEC.9-12.1.2 demonstrate knowledge and appropriate use of hardware components, software programs, and their connections.

Performance Descriptors (TEC.PD.9-12.1)

- **Distinguished**

The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in technology basic operations and concepts. The student uses data input skills appropriate to the task and demonstrates knowledge and appropriate use of hardware components, software programs, and their connections. The student performing at the distinguished level also independently analyzes, evaluates and applies appropriate choices among technology systems and resources.

- **Above Mastery**

The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge and skills that exceeds the standard in technology basic operations and concepts. The student uses data input skills appropriate to the task and demonstrates knowledge and appropriate use of hardware components, software programs, and their connections. The student performing at the above mastery level also assists others, employs troubleshooting strategies, and makes appropriate choices among technology systems and resources.

- **Mastery**

The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in technology basic operations and concepts. The student uses data input skills appropriate to the task and demonstrates knowledge and appropriate use of hardware components, software programs, and their connections.

- **Partial Mastery**

The student performing at the partial mastery level demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in technology basic operations and concepts. Performance needs further development. The student requires assistance to use data input skills appropriate to the task and demonstrates knowledge of hardware components, software programs, and their connections.

- **Novice**

The student performing at the novice level demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in technology basic operations and concepts. Performance needs considerable development. The student requires considerable direction to use data input skills appropriate to the task and demonstrates basic knowledge of hardware components, software programs, and their connections.

Standard 2: Social, Ethical and Human Issues (TEC.S.2)

Students will:

- demonstrate understanding of the ethical, cultural, and societal issues related to technology;
- practice responsible use of technology systems, information, and software; and
- develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.

Social, Ethical and Human Issues Objectives

Students will:

- TEC.9-12.2.1 practice ethical behavior in using computer-based technology for class assignments and projects.
- TEC.9-12.2.2 adhere to Fair Use and Multimedia Copyright Guidelines, citing sources of copyrighted materials in papers, projects and multi-media presentations.

Performance Descriptors (TEC.PD.9-12.2)

- **Distinguished**

The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in social, ethical and human issues in technology. The student practices ethical behavior in using computer-based technology for class assignments and projects. The student adheres to Fair Use and Multimedia Copyright Guidelines, citing sources of copyrighted materials in papers, projects and multi-media presentations. The student performing at the distinguished level also recognizes and articulates the implications and consequences resulting from illegal and unethical behaviors among peers, family, and community regarding the use of technology and information.

- **Above Mastery**

The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge and skills that exceeds the standard in social, ethical and human issues in technology. The student practices ethical behavior in using computer-based technology for class assignments and projects. The student adheres to Fair Use and Multimedia Copyright Guidelines, citing sources of copyrighted materials in papers, projects and multi-media presentations. The student performing at the above mastery level also recognizes the implications and consequences resulting from illegal and unethical behaviors among peers, family, and community regarding the use of technology and information.

- **Mastery**

The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in social, ethical and human issues in technology. The student practices ethical behavior in using computer-based technology for class assignments and projects. The student adheres to Fair Use and Multimedia Copyright Guidelines, citing sources of copyrighted materials in papers, projects and multi-media presentations.

- **Partial Mastery**

The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in social, ethical and human issues in technology. Performance needs further development. With assistance, the student practices ethical behavior in using computer-based technology for class assignments and projects. The student understands Fair Use and Multimedia Copyright Guidelines, and inconsistently cites sources of copyrighted materials in papers, projects and multi-media presentations.

- **Novice**

The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in social, ethical and human issues in technology. Performance needs considerable development. Under supervision, the student practices ethical behavior in using computer-based technology for class assignments and projects. The student has a minimal understanding of Fair Use and Multimedia Copyright Guidelines, and rarely and/or inaccurately cites sources of copyrighted materials in papers, projects and multi-media presentations.

Standard 3: Technology Productivity Tools (TEC.S.3)

Students will:

- use technology tools to enhance learning, increase productivity, and promote creativity; and
- use productivity tools to collaborate in constructing technology-enhanced models, preparing publications, and producing other creative works.

Technology Productivity Tools Objectives

Students will:

- TEC.9-12.3.1 integrate advanced technology application skills in the use of the word processor, database and spreadsheet.
- TEC.9-12.3.2 select and use appropriate technology tools to efficiently collect, analyze and display data that is relevant to class assignments.
- TEC.9-12.3.3 practice and refine knowledge and skills in databases in preparing classroom assignments and projects.
- TEC.9-12.3.4 create, publish, and present projects related to content areas using a variety of technological tools.

Performance Descriptors (TEC.PD.9-12.3)

- **Distinguished**

The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in technology productivity tools. The student integrates advanced technology application skills in the use of the word processor, database, and spreadsheet. The student selects and uses appropriate technology tools to efficiently collect, analyze and display data that is relevant to class assignments. The student practices and refines knowledge and skills in databases in preparing classroom assignments and projects. The student creates, publishes, and presents projects related to content areas using a variety of technological tools. The student at the distinguished level independently analyzes, evaluates and applies innovative technology solutions for personal and academic productivity.

- **Above Mastery**

The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge and skills that exceeds the standard in technology productivity tools. The student fully integrates advanced technology application skills in the use of the word processor, database, and spreadsheet. The student selects and uses appropriate technology tools to efficiently collect, analyze and display data that is relevant to class assignments. The student practices and refines knowledge and skills in databases in preparing classroom assignments and projects. The student creates, publishes, and presents projects related to content areas using a variety of technological tools. The student at the above mastery level can also assist others in the use of technology tools and resources for managing and communicating personal/professional information.

- **Mastery**

The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in technology productivity tools. The student integrates advanced technology application skills in the use of the word processor, database, and spreadsheet. The student selects and uses appropriate technology tools to efficiently collect, analyze and display data that is relevant to class assignments. The student practices and refines knowledge and skills in databases in preparing classroom assignments and projects. The student creates, publishes, and presents projects related to content areas using a variety of technological tools.

- **Partial Mastery**

The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in technology productivity tools. Performance needs further development. With assistance, the student integrates technology application skills in the use of the word processor, database, and spreadsheet. With assistance, the student uses appropriate technology tools to collect and display data that is relevant to class assignments. With assistance, the student practices knowledge and skills in databases in preparing classroom assignments and projects. With assistance, the student creates, publishes, and presents projects related to content areas using a variety of technological tools.

- **Novice**

The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in technology productivity tools. Performance needs considerable development. Under supervision, the student demonstrates basic technology application skills in the use of the word processor, database, and spreadsheet. Under supervision, the student uses technology tools to collect and display data that is relevant to class assignments. Under supervision, the student practices knowledge and skills in databases in preparing classroom assignments and projects. Under supervision, the student creates, publishes, and presents projects related to content areas using some technological tools.

Standard 4: Technology Communication Tools (TEC.S.4)

Students will:

- use telecommunications to collaborate, publish, and interact with peers, experts, and other audiences; and
- use a variety of media and formats to communicate information and ideas effectively to multiple audiences.

Technology Communication Tools Objectives

Students will:

- TEC.9-12.4.1 use telecommunications and online resources for the purpose of communicating with audiences inside and outside of the classroom.

Performance Descriptors (TEC.PD.9-12.4)

- **Distinguished**

The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in technology communication tools. The student uses telecommunications and online resources for the purpose of communicating with audiences inside and outside of the classroom. The student performing at the distinguished level also makes inferences, determines cause/effect relationships, and formulates logical predictions about the curriculum-related problems, issues and information. Through telecommunication projects, students verify their thinking, support conclusions, and establish connections with previously studied projects.

- **Above Mastery**

The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge and skills that exceeds the standard in technology communication tools. The student uses telecommunications and online resources for the purpose of communicating with audiences inside and outside of the classroom. The student performing at the above mastery level also collaborates with peers, experts and others using telecommunications and collaborative tools to synthesize and evaluate curriculum-related problems, issues and information, and to draw conclusions about the solutions or products for audiences inside and outside the classroom.

- **Mastery**

The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in technology communication tools. The student uses telecommunications and online resources for the purpose of communicating with audiences inside and outside of the classroom.

- **Partial Mastery**

The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in technology communication tools. Performance needs further development. With assistance, the student uses telecommunications and online resources for the purpose of communicating with audiences inside and outside of the classroom.

- **Novice**

The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in technology communication tools. Performance needs considerable development. Under supervision, the student uses telecommunications and online resources for the purpose of communicating with audiences inside the classroom.

Standard 5: Technology Research Tools (TEC.S.5)

Students will:

- use technology to locate, evaluate, and collect information from a variety of sources;
- use technology tools to process data and report result; and
- evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.

Technology Research Tools Objectives

Students will:

- TEC.9-12.5.1 use a variety of strategies to acquire information from electronic resources.
- TEC.9-12.5.2 conduct online research and evaluate the information found as to the validity, appropriateness, content and usefulness.

Performance Descriptors (TEC.PD.9-12.5)

- **Distinguished**

The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in technology research tools. The student uses a variety of strategies to acquire information from electronic resources. The student conducts online research and evaluates the information found as to the validity, appropriateness, content and usefulness. The student performing at the distinguished level synthesizes information to articulate new knowledge.

- **Above Mastery**

The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge and skills that exceeds the standard in technology research tools. The student uses a variety of strategies to acquire information from electronic resources. The student conducts online research and evaluates the information found as to the validity, appropriateness, content and usefulness. The student performing at the above mastery level analyzes and draws conclusions from electronic information sources and applies acquired knowledge logically to technology projects.

- **Mastery**

The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in technology research tools. The student uses a variety of strategies to acquire information from electronic resources. The student conducts online research and evaluates the information found as to the validity, appropriateness, content and usefulness.

- **Partial Mastery**

The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in technology research tools. Performance needs further development. With assistance, the student uses a variety of strategies to acquire information from electronic resources. With assistance, the student conducts online research and evaluates the information found as to the validity, appropriateness, content and usefulness.

- **Novice**

The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in technology research tools. Performance needs considerable development. Under supervision, the student uses strategies to acquire information from electronic resources. Under supervision, the student conducts online research and includes information with little assessment of its validity, appropriateness, content and usefulness.

Standard 6: Technology Problem-solving and Decision-making Tools (TEC.S.6)

Students will:

- use technology resources for solving problems and making informed decisions; and
- employ technology in the development of strategies for solving problems in the real world.

Technology Problem-solving and Decision-making Tools Objectives

Students will:

TEC.9-12.6.1 investigate and apply expert systems, intelligent agents, and simulations in real world situations.

Performance Descriptors (TEC.PD.9-12.6)

- **Distinguished**

The student demonstrates exceptional and exemplary performance with distinctive and sophisticated application of knowledge and skills that exceeds the standard in technology problem-solving and decision-making tools. The student investigates and applies expert systems, intelligent agents, and simulations in real world situations. The student performing at the distinguished level also conceptualizes, designs, and implements problem solving and decision making technologies in the development of strategies for solving problems in the real world.

- **Above Mastery**
The student demonstrates competent and proficient performance and shows a thorough and effective application of knowledge and skills that exceeds the standard in technology problem-solving and decision-making tools. The student investigates and applies expert systems, intelligent agents, and simulations in real world situations. The student performing at the above mastery level also uses technology tools to construct new knowledge.
- **Mastery**
The student demonstrates fundamental grade level or course knowledge and skills by showing consistent and accurate academic performance that meets the standard in technology problem-solving and decision-making tools. The student investigates and applies expert systems, intelligent agents, and simulations in real world situations.
- **Partial Mastery**
The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and or omissions in technology problem-solving and decision-making tools. Performance needs further development. With assistance, the student investigates and begins to apply expert systems, intelligent agents, and simulations in real world situations.
- **Novice**
The student demonstrates considerable need for the development of fundamental knowledge and skills, characterized by fragmented and incomplete performance in technology problem-solving and decision-making tools. Performance needs considerable development. Under supervision, the student investigates expert systems, intelligent agents, and simulations in real world situations.

FISCAL NOTE WORKSHEET

(Submit 4 Copies)

HD NO _____ DRAFT NO _____ BILL NO _____ RESOLUTION NO _____

SUBJECT: Policy 2520.14 Technology Content Standards and Objectives for West Virginia Schools FUND _____

SOURCE OF REVENUE: GENERAL FUND SPECIAL OTHER (SPECIFY) _____

COST OF ESTIMATE BASED ON: AN ORIGINAL ESTIMATE BUDGET BILL OTHER (SPECIFY) _____

INCOME ESTIMATE BASED ON: AN ORIGINAL ESTIMATE BUDGET BILL OTHER (SPECIFY) _____

SHOW OVER-ALL EFFECT IN ITEMS 1 AND 2 & GIVE EXPLANATION OF BREAKDOWN BY FISCAL YEAR INCLUDING LONG-RANGE EFFECT

EFFECT OF PROPOSAL	ANNUAL		FISCAL YEAR		
	INCREASE	DECREASE	CURRENT	NEXT	THEREAFTER
1. ESTIMATED TOTAL COST	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
PERSONAL SERVICES CURRENT EXPENSES REPAIRS/ALTERATIONS EQUIPMENT OTHER	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
2. ESTIMATED TOTAL REVENUES	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0

3. EXPLANATION OF ABOVE ESTIMATES (INCLUDING LONG-RANGE EFFECT):

There will be no increase in costs due to this policy.

DATE

AGENCY

AUTHORIZED REPRESENTATIVE

January 9, 2003

West Virginia Department of Education

David Stewart

**Policy 2520.14: Technology Content Standards
and Objectives for West Virginia Schools**

Please use this form when commenting on proposed Policy 2520.13. You may attach additional sheets if necessary.

Individual/Organization: _____

Title: _____

Street Address: _____ **City** _____ **State** _____ **Zip** _____

Comments/Suggestions

Explanation of Terms, Abbreviations

Technology Content Standards

Kindergarten Technology Objectives and Performance Descriptors

First Grade Technology Objectives and Performance Descriptors

Second Grade Technology Objectives and Performance Descriptors

Third Grade Technology Objectives and Performance Descriptors

Fourth Grade Technology Objectives and Performance Descriptors

Fifth Grade Technology Objectives and Performance Descriptors

Sixth Grade Technology Objectives and Performance Descriptors

Seventh Grade Technology Objectives and Performance Descriptors

Eighth Grade Technology Objectives and Performance Descriptors

Ninth - Twelfth Grade Technology Objectives and Performance Descriptors

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